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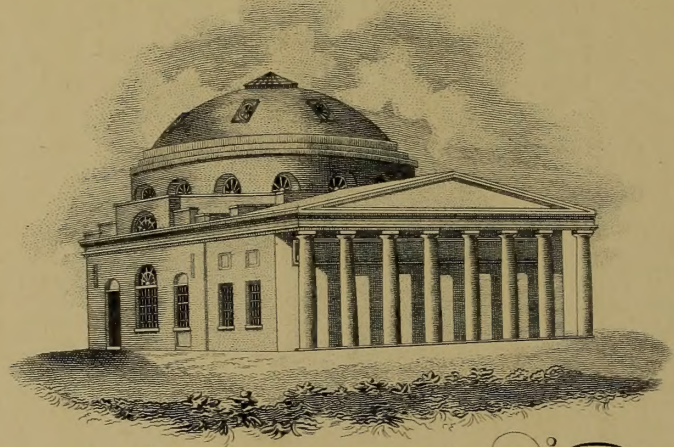

University of Maryland

University of Maryland Theses

Early Doctor of Medicine and Doctor of Physic Dissertations with Corrected Tables of Contents

These manuscripts described as either an Inaugural Dissertation or an Inaugural Essay were presented to the University of Maryland for the Degree of Doctor of Medicine and/or Doctor of Physic during the years 1813-1887. The individual dissertations were bound together during the 1940's. The original tables of contents for the bound volumes contained multiple errors in authors' names, titles, and/or years. To address these errors, an additional "Corrected Table of Contents" has been inserted at the beginning of each volume.

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UNIVERSITY OF MARYLAND

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[2] Original ink drawings of Maisonneuve's Urethrotome.

HSHSL 2012 for the UM Digital Archive. Sources consulted for corrections: Original Dissertation; University of Maryland Medical Faculty, Matriculation List, 1821-1851; Cordell, Eugene F. "University of Maryland, 1807-1907" (New York : The Lewis Publishing Company, 1907), Volume 2.

UNIVERSITY OF MARYLAND

THESES

1866 (d)

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AN

Inaugural Dissertation

ON

Intermittent Fever

SUBMITTED TO THE EXAMINATION

of the

Provost, Regents and Faculty

of

PHYSIC,

of the

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

Doctor of Medicine,

by

James E Sears

of

Maryland

Session 58 1866-6

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WM

Intermittent fever is a disease which generally attacks persons exposed to miasma the nature of which is not well understood and hitherto all attempts to isolate and analyse it have been fruitless. But it is generally supposed to arise from marshes and swamps and the circumstances which appear to be essential to its production are heat moisture and vegetable decomposition. The ordinary types of intermittent fever quotidian tertian and quartan. In the quotidian the paroxysm comes every day with an interval of twenty four hours in the tertian every other day with an interval of forty eight hours and in the quartan every third day with an interval of seventy two hours. Other types are mentioned as quintan sextan septan and octan but they must be comparatively rare. The double quotidian and tertian are also

mentioned. Symptoms. The paroxysm of a regular and fully formed intermittent consists of three separate and distinct stages namely the cold, the hot and the sweating which generally succeed each other in the order above mentioned. Frequently the paroxysm is preceded by the ordinary preliminary symptoms of fever such as feelings of weariness or languor general uneasiness yawning stretching and occasionally with these feelings there are perhaps some pain in the back and head, impaired appetite and a scarcely observable degree of febrile excitement constitute the whole apparent disease for several successive paroxysms. Sometimes the first regular paroxysm seizes the patient in the midst of apparently good health and without warning. Cold Stage. After some stretching and yawning the patient experiences sensations of chilliness especially in the back and

limbs. These increase in severity and gradually spread over the body and not infrequently the chill-liness seems to run in longitudinal lines as if little streamlets of ice cold water were trickling down the trunk. Along with this the patient experiences trembling or shivering, rapid and successive shudders run through the frame, the teeth frequently chatter and the bedstead is occasionally shaken with the violence of the involuntary movements. The body frequently feels cold to an observer especially the hands, feet nose, ears and cheeks. Sometimes the surface is hotter than in health although the patient may experience sensations of cold. In connection with the feelings of coldness the surface is usually pale and contracted and sometimes presents the rough appearance called goose flesh which is owing to the protection of the

sebaceous and capillary follicles while the proper tissue of the skin shrinks. The hands are shrunken, the features contracted the countenance pale and the lips and ends of the fingers livid. Though the tongue is pale and moist there is often thirst with an indisposition for food and occasionally with nausea and vomiting of food, mucous or bilious matter. There is sometimes a short, dry cough and irregular and often hurried breathing. The patient also frequently experiences a feeling of weigh or oppression in the epigastrium or chest. The pulse in some instances is small and accelerated in others slow irregular and feeble. The secretions are generally scanty except the urinary which is usually pale and copious. The nervous system is sometimes much disordered. Hot Stage Pyrexia. The transition from the cold to the hot stage is not abrupt.

Rigors for a time alternate with flushes of heat. The first feelings of warmth are rather agreeable than otherwise. A glow is felt about the face and temples a sense of burning in the hands and feet and the patient is conscious of increased heat of the breath. Gradually the whole surface becomes hot but even now if a limb be moved into a cool part of the bed the patient experiences sudden chills vibrating disagreeably through the frame. At length all traces of the cold stage entirely disappear and the patient experiences a universal burning heat. The cheeks are flushed, the eyes sparkle, the surface is every where reddened and the skin distended with blood. The mouth is hot and dry, the tongue fresh and the patient complains of thirst. The indisposition for food is usually greater in this than in the cold stage. The pulse is more frequent than in health

and usually full and strong but in some cases when the vital powers are greatly reduced it is frequent and feeble. The various secretions are diminished the skin dry and the urine scanty and high colored. There is a shooting pain in the head with a feeling of giddiness in the temples

Advancing stage. Perspiration generally first appears upon the face and gradually spreads over the surface. It is sometimes slight generally copious and occasionally profuse. Upon its first appearance the patient generally experiences some relief and the febrile symptoms gradually subside as the perspiration advances. The mouth is moistened the skin becomes cool, the headache disappears the excitement of the circulation subsides and the patient falls into a calm sleep from which he awakes free from fever and generally feels much better. The kidneys now resume their function and the urine which is passed abundantly

upon cooling a lateritious sediment. It is said that the sweating stage is sometimes wanting the fever either gradually subsiding without any discharge or the place of the perspiration being supplied by a diarrhoea or a copious flow of urine

Intermission or Apyrexia. The patient after the paroxysm has subsided is not generally quite free from disease. Facility of fatigue pains in the back and loins general languor, uneasy sensations in the head and epigastrium with some fur upon the tongue and defective appetite are generally left behind. The patient is not infrequently pale or has a somewhat sallow complexion and sickly look. Sometimes they are slight sometimes so considerable as in connection with some heat of the skin and frequency of the pulse to render the intermission imperfect. They generally diminish with the continuance of the disease and

at length the patient becomes apparently quite well in the intervals of his attacks.

Course and Termination. The paroxysms of intermittent fever generally return at the same hour of the day but there is however frequently some variation in this respect. The paroxysm instead of commencing precisely at the same time of day as that of the preceding may be an hour or two earlier or an hour or two later and it sometimes happens that if before the time on day it is after it on the next. But instead of this shifting in some cases each succeeding paroxysm occurs an hour or two earlier. In other cases it occurs an hour or two later. In the former is called an anticipating the latter a retardating intermittent. One type may in this way run into another. It is said that a paroxysm seldom occurs at night. Intermittent fever if left to itself will not in general run an indefinite. The milder cases frequently terminate spontaneously

When an intermittent has been of short by any means what ever it has a strong tendency to return so that a very slight cause will often provoke a recurrence and frequently a recurrence will take place without any appreciable cause. In these returns there is a singular tendency to observe the septenary period. An autumnal attack of intermittent fever is frequently succeeded by another at the opening of warm weather in the spring. The subsequent attacks are generally milder than the original.

Grades and Complications. Intermittent fever may be attended with a full strong pulse a vigorous reaction a florid surface and a pure and rich blood. Or it may be attended with a frequent and feeble pulse an unusual depression in the chill a slow and uncertain reaction, a dusky hue of the skin and a depraved and impoverished blood. It may however be of any intermediate grade between these two extremes. It may be typhoid a malignant

or pernicious. These differences depend not on the peculiar character of the miasma but on the previous condition of the patients system or the influence of other causes acting conjointly with the miasma. Cases occurring in a temperate latitude frequently assume the Sthenic form. Inflammation of one or more organs of the body is met in conjunction associated with intermittent fever. The organs most frequently affected are the brain or its lining membranes the lungs and the Stomach and bowels.

Effects. When an attack of intermittent fever is speedily checked it will generally have no other unpleasant consequences behind it than a disposition to return. But when allowed to run on indefinitely or when frequently provoked to return by continued exposure to the cause it frequently produces very unpleasant and disagreeable effects. The most common sequel of intermittent fever is an enlargement of the Spleen.

The liver is sometimes enlarged and indurated and when not sensibly increased in bulk is often affected with chronic inflammation or derangement of function giving rise to jaundice dyspepsia and diarrhoea. The appearance of a patient labouring under an attack of chronic intermittent fever is characteristic. He experiences muscular weakness and fatigue upon slight exertion. His countenance is also sallow with a sad and dejected expression indicative of depression of spirits. The body is in some cases emaciated in others rather full as if bloated. The tongue is frequently furred the appetite impaired the stools clay coloured and the urine occasionally dark brown. Dropsy also frequently follows a protracted or neglected case of intermittent fever. But when thus potent for evil intermittent fever has the credit of also being potent for good by super

seeling other and more malignant diseases and by removing tendencies which had before resisted all treatment. The diseases which are thought to be thus benefitted are neuralgia epilepsy dyspepsia hysteria asthma rheumatism and the various cutaneous diseases. But it seems doubtful whether there is any direct benefit to be derived from an attack of intermittent fever in any of the above mentioned diseases. At least it would not be advisable to subject a patient suffering with any of the diseases mentioned to the influence of miasma.

Anatomical Characters. The proper anatomical characters of intermittent fever has scarcely been ascertained. The lesions most commonly observed are inflammation of the brain and its lining membranes cerebral congestion and effusion inflammation and congestion of the pleura and lungs gastritis and

gastro enteritis and disease of the liver and spleen are the most common affections noticed in persons who have died while labouring under intermittent fever.

Causes. Miasma seems to be the essential cause of intermittent fever. It seems to find more readily entrance into the system when exhausted by fatigue or hunger debilitated by previous disease or mental depression and during sleep. It sometimes seems to lie dormant in the system until the patient is exposed to an exciting cause such as going out of doors before sun rise in the morning and after sun set in the evening, getting his feet wet or sleeping in damp rooms exposure to the heat of the sun excessive exertion mental excitement or a cold bath and various other circumstances which may act as exciting causes. The time

At which the disease is liable occur after exposure to the cause is altogether indefinite. It may occur in a few hours or not for weeks or months

Diagnosis. The diseases with which intermittent fever is liable to be confounded are hectic and remittent fever. Hectic fever however may be distinguished by the irregularity in the recurrence of its paroxysm, the comparative absence of head ache excessive and prolonged nightsweats, the clearer complexion and brighter eye, frequent want of gastric derangement and fur on the tongue the continued frequency of the pulse throughout the interval and the serious organic disease of which hectic is a mere symptom. Remittent fever is only distinguished by the continuance of the fever and frequently it is very difficult to tell whether the disease belongs to one or the

Other variety

Prognosis. Uncomplicated cases of intermittent fever are generally and almost always curable. It is only when there is a malignant tendency or complication that danger is to be apprehended. The chief danger of ordinary intermittent is from the secondary affections which result from its neglect such as chronic enlargement and induration of the liver and spleen and dropsy.

Treatment. Almost every remedy that finds a place in Materia Medica has at some time been given and recommended in the treatment of intermittent fever. The majority of which were no doubt perfectly inert. Cinchona and its active principle (Cinchonia) have however proved to be the most efficacious of the remedies that have been used. Cinchona on account of its tendency to irritate the

stomach and bowels is not at present much used in the treatment of intermittent fever quinine which seems to possess all the anti periodic virtues of cinchona without irritating the stomach and bowels in a degree equal to cinchona therefore it has almost entirely superseded cinchona in the treatment of intermittent. After cinchona and its active principle quinine the sulphate of which is the preparation generally used arsenic and opium perhaps stand next in order.

In the cold stage. During the cold stage in a great many cases little treatment is required and even if left to nature no serious harm is likely to [illegible]. But there are cases in which remedies are important and in the majority the symptoms may be alleviated. During the chill the patient should remain in bed and be warmly covered both

of warm water, warm tracts, bags of warm sand and warm flannel should be placed around the patient. Heat may also be applied by means of hot pediluvia and vapour bath. Hot drinks as lemonade, toast water an infusion of Balm may be given opium when there is much pain and nervous disorder is said to act beneficially. And an emetic given at the commencement is said will almost always shorten and frequently entirely prevent the pain. In the Hot Stage. During the hot stage the patient should still remain in bed and be placed upon refrigerant treatment. He should be allowed ice in small pieces and lemonade in small draughts. Potassae citras liquor potassae citratis effervescens, spiritus mindereri or potassae chloras may be given in

small doses at short intervals. Should there be an irritable condition of the stomach the remedies before mentioned are generally all that will be required. Should these fail and the stomach be filled with sour acid or bilious liquids it may be washed out with copious draughts of warm water, a sinapism and an anodyne enema. When inflammation of any of the organs is present with a full strong and hard pulse blood may be taken from the arm but this is seldom necessary. Local bleeding in such cases may often be practised with advantage. If the patient be restless and morbidly wakeful at night a dose of Dovers powders may be given at bed time which answers the double purpose of being both diaphoretic and soporific. The diet during this stage should be only tea and bread

In the sweating Stage little else is needed than that the patient be careful not to expose himself while perspiring to currents of colel air In the Intermission This is the time for the effective treatment of intermittent fever. If the Stomach be loaded with undigested food or oppressed and irritated by acrid accumulations an emetic dose ipecacuanha may be given but this is seldom necessary. The bowels should be evacuated by a mild cathartic as Glauber salts calcined magnesia or a seidlitz powder. And then Quinia sulphas should be given in divided doses from twenty to thirty grain given in divided doses during the intermission will generally be sufficient to break the paroxysm. It should as intermittents are exceedingly liable to recur be continued for several

days after the paroxysm has been broken and in this way an ordinary attack of intermittent fever may easily cured. Arsenic opium prunus virginiana cupatorium and various other vegetable tonics have been recommended and are now chiefly used in domestic practice

The various complications are to be treated as if they had arisen separately

Prevention. Miasmatic regions should be avoided from the first of July to the commence of black frost in autumn. Those that are compelled to reside in or pass through them at this season should especially avoid the morning and evening air and should never sleep out at night or even with their windows hoisted. If necessarily exposed at these times it should not be with the stomach

empty or after fatigue or exhaustion of any kind and the system should be kept steadily under the moderate influence of quinia or cinchona.

In this essay on intermittent fever I have endeavoured to mention the most frequent types, the most important symptoms, the several stages along with the intermission course and termination, grades and complications effects, anatomical characters causes, diagnosis prognosis and treatment. Without attempting detail all the theories that have been advanced as to the origin and cause of miasm. All the types that have been alluded to by different writers and the countless number of remedies that have been recommended in the treatment of intermittent

given. Leaving them for more able and learned men to discuss. And hope that this essay will be approved by the very able and learned Professors of University of Maryland

Your humble pupil
James Conoy Sears

AN

Inaugural Dissertation

ON

Cardiac Thrombosis

SUBMITTED TO THE EXAMINATION

of the

Provost, Regents and Faculty

of

PHYSIC,

of the

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

Doctor of Medicine,

by

Jerome Henry Kidder, A. M.

of

Baltimore

Session 1865-66

Cardiac Thrombosis

1. The man who pretends to add a new fact to the store which constitute the science of Medicine has need to have read much & thought more; to have tested each postulate carefully at the touch-stone of experience, both personal & contemporary, before he ventures to draw a conclusion; and so thoroughly understand his subject as to possess the certainty that he neither reiterates unsufficient grounds the conclusions of others, nor vainly contradicts the results of more diligent investigation. Ignorance and vanity are certainly, in the man who claims the title of Doctor-teacher — the unpardonable

sine, and deservedly entail humiliation and disgrace.

Both vanity and ignorance might justly be laid at my door were I to attempt to point out an undiscovered path for the entrance of disease, or to indicate the barriers fittest for its obstruction — I shall reckon myself fortunate if I can direct the attention of wiser men to a lesion hitherto disregarded, which may prove a more frequent cause of death than has been generally believed. — The geese on the Capitol, it will be remembered, by their outcry saved the Citadel.

2. In the course of my duties at Patterson Park and Hicks U.S. Military Hospitals, I had frequent occasion to assist at post mortem examinations; and a question

soon arose as to the white clot so frequently found in the ventricles of the heart. Few that have performed autopsies can have failed to observe these clots & to speculate as to their composition & the date of their formation; considering which it is remarkable that so little attention should have been paid to the subject by scientific investigators. Most writers (of those at least to which I have had access) either dismiss the subject with a passing mention or do not notice it at all.

I find that these coagula are variously called Thrombi (Θρόμβος = a clot of blood) and Emboli (Ἔμβολος = a plug). "The coagulum which is usually fibrinous, is known as an antemortem clot, or thrombus" .. "The migratory substance is an embolus. They may consist not

Tanner's Practice, p 47.

only of fibrin, but of a fragment of gangrenous tissue, or of the constituents of tubercle or cancer, which may have got into the vessel". The composition has, however, been generally agreed upon as fibrinous. Nevertheless M. Virchow, while he confines his remarks upon thrombosis mainly to that occurring in the arteries and smaller vessels, makes some remarks upon the colorless corpuscles which might lead to the suspicion that they are sometimes the main element. "[2] The colourless corpuscles possess, namely x xxx the peculiar property of being sticky, so that they readily adhere to one another, and, under certain circumstances also cling fast to other parts, while the red corpuscles do not present this phenomenon xx xx in every vessel in which the stream becomes slower and the pressure weaker, an agglutination of the cor-

[2] Virchow's Cell. Path. Sect VII, p 184.

pus-cles may take place." Jones & Sieveking mention a condition of the clot, which I have myself seen, in which the centre is occupied by a softened or liquid mass, "resembling pus". This may be composed of the colorless corpuscles spoken of by M. Virchow (not to be distinguished from pus under the microscope) which, after serving as a nidus around which the fibrine of the blood has coagulated, have softened within and lost their adhesiveness. On the other hand, M. Virchow[3] speaks of the colorless corpuscles as "investing the coagulum like a sheath" when the vessel is opened after death. In the one case the fibrinous clot, in the other an agglomeration of white corpuscles, is first formed, the other forming a secondary investment. The microscope has made the presence of fibrin plainly evident in all the specimens I have so examined, and it would be

[3] Op. cit., p. 18

difficult for me to believe in a thrombus composed wholly of the colorless corpuscles of the blood; but I have often observed corpuscles resembling pus, & believed them to be pus, until after I read M. Virchow's observations. My own decision then, based upon the limited information at my command, would be that both fibrin and colorless blood-corpuscles enter into the composition of most white heart clots. I am strengthened in this belief by M. Virchow, who is, on this subject considered best authority; xx "it is very rarely that a considerable increase of fibrin takes place without a simultaneous increase in colourless blood corpuscles xxx for these corpuscles possess extraordinary adhesiveness, and accumulate in considerable masses wherever there is a retardation of the stream of blood,

4 Virchow. Op. cit: p. 199.

so that, in the dead body, the greater number is always found in the right heart." He goes on to relate an instance of a heart in which, the right auricle being punctured, the blood almost exactly resembled pus. It could not then, have at the same time resembled a clot.

3. I had hoped to throw considerable light upon this subject by a classification of the frequency of Thrombosis in the different diseases, as a post mortem phenomenon — and supposed I had gained the very material most suited for the purpose, in the "Observation Book" of Dr. G. M. McGill Asst. Surgeon U. S. Army. This close observer, while in charge of the National U. S. Gen'l Hospl, made many post mortem examinations, and kept a minute record of the

each case, the wonderful accuracy of which I had frequent opportunity of attesting, after he came to Hicks Hospital. His notes on 58 cases I have now before me — but a difficulty arises in classification, from the impossibility of determining, from post mortem signs only, upon the [illegible] prominent symptom, & consequently the disease, which led to death and influenced the formation of heart clots. The brief ante mortem histories in these cases, having been written by less interested or less careful observers, are nearly worthless, & I am compelled to attach less importance to my statistics than I had at first hoped. In the following tabular statement, I have determined the diagnosis from what appeared the prominent lesion, although scarcely a single case was uncomplicated

In the 58 cases noted, a white clot of greater or less size & consistence was found in one or both ventricles in 28 instances, of which there were:

3 of Tuberculosis
4 " Pyaemia (greenish clot in one case)
3 " Meningitis (Clots very small, one compl. wi. Rheumatism)
3 " Congestion of Brain (" " " " " " fatty heart)
3 " Chronic Diarrhoea (one typhoid)
3 " Pneumonia (one convalescent, no apparent cause for death)
2 " Gun Shot Wound (one lung, one back)
2 " Pulmonary Apoplexy
1 " Fractured Skull
1 " Diphtheritis
1 " Delirium Tremens
1 " Secondary Hemorrhage (following amputation)
1 " Tetanus (following Erysipelas)
28

The clot was black, color not specified, or blood fluid (doubtless white in many of the "not specified") in 22 cases, of which there were:

6 of Congestion of Brain
5 " Meningitis
3 " Pneumonia
1 " Heart Disease
1 " Diarrhoea
1 " Typhoid Fever
1 " Pyaemia (color not noted)
1 " Phthisis (" " ")
1 " Inflammation Brain & Spinal Cord fr. gun shot wound
1 " Serous Apoplexy
1 Unknown
22

In 9 cases the clots in the heart were not noted as such.

From the above tabulation absolutely no certain conclusion can be drawn. Perhaps the white clot is less frequent in cerebral & ethenic affections, and more common in blood diseases and debility. But if this hypothesis were confirmed in every instance noted above, nothing could be considered proved, as the classification is entirely "by name" & therefore, like treatment by name, uncertain. I gained one important conclusion from these notes however, viz; that the formation of fibrinous clots bears a close relationship to the duration of disease, (and, presumably, to the debility of the patient). Patients dying after the slow exhaustion of diarrhoea, and the like, were nearly certain to be found with white clots in one or both ventricles. But [illegible]

by the swift combustion of phrenitis & sthenic inflammations, were almost universally free from this lesion. This agrees with my own explanation of the modus operandi of the clotic formation.

Muscular action directly exhausts the blood of its fibrin in the processes of waste and repair. It is probable that albumen must pass through the more highly oxidized condition of fibrin before it becomes fitted for the replacement of muscle, & hence the accelerated breathing attendant upon violent exercise, supplying to albumen the oxygen necessary for its fibrination (among other ends met). In instances of excessive expenditure of muscular tissue therefore, as in those of animals hunted to death, the demand

for fibrin (crude muscle) has been greater than the supply, which being exhausted, the blood refuses to coagulate - fibrin is deficient. Now I think it reasonable to suppose that the converse of this well known phenomenon will occur, the conditions being reversed. When a patient spends days and weeks & even months upon a sick bed, almost without muscular action, while the oxidation of albumen goes steadily on, he must accumulate fibrin in his blood; which thereby grows more readily coagulable, & predisposed to concrete upon the first opportunity offered by syncope, or other temporary arrest of its motion. Dr. Lawrence says[5]: "These concretions are most frequently met with in diseases attended with great exhaustion & debility, & they have been especially found in cases of

[5] Practice, p 187

croup, diphtheria, scarlet fever, endocarditis, pneumonia, bronchitis, typhus, purpura, erysipelas, hemorrhage & prostration from natural decay as well as from dissipation. With regard to croup, for example, my own experience would lead me to believe that death is much more frequently due to thrombi than to simple asphyxia." Several cases are then detailed of pregnant women who have died suddenly & been found to have owed their death to thrombi in the heart or principal arteries. This is strong testimony. Dr. Meigs, who considers himself the first to connect the embolus in the heart with death in the relation of cause & effect,[6] & therefore should carry special weight

[6] "I have a just right to claim the merit of being the first writer to call the attention of the medical profession to these sudden concretions of the concrescible elements of the blood in the heart and great vessels xxx. M. Virchow has carried off the palm but it ought to be true that "Palmam qui [illegible] ferat" system of Obstetrics, [illegible]

with his words, devotes considerable space to this subject. I make a few brief extracts: "7 It is well known that the coagulability of the blood becomes greater in proportion as any hemorrhage progresses — therefore a woman who has lost during her labor 4 to 8 ounces of blood has the rest of it more coagulable than before the flooding commenced. xxx I believe that few persons die with scarlet fever, or consumption, or small pox, who are not hurried into the grave by means of coagula formed in the heart, late in the progress of the case, in consequence of the debilitation or lessening of that inducted life that passes from the vessel to the living blood. (Dr. Meigs, it will be remembered, thinks that the endangium of the vessels is the nutrix of the blood, and that its nutrition goes on through this membrane) I have many times

7 Op. cit. p 615

ing disease of pulmonary consumption & other lingering & some acute maladies, perceived from the running & fluttering pulse, & the augmented respiratory distress, that the last fatal blow was struck by the formation of a heart clot of greater or less size. xxx I should think that a fainting fit could hardly prove fatal per se; but if a heart clot should form during the deliquium, it seems unlikely that the blood could again move in its circle." This writer details at length many cases of parturient women who have died during syncope from, or succeeding, flooding, with the symptoms he has ascribed to cardiac thrombosis, & in every case in which opportunity was afforded, his diagnosis was verified by the autopsy. Sometimes the patient would linger on for days in a condition resembling cyanosis, from the insufficient aëration of the blood, com-

times she would slowly recover.— In case 2, of chest disease, Andral's Clinique Medicale (the only case in which I find mention of white heart clots) the "tissue of the heart was very pale; its cavities contained fibrinous clots partially deprived of coloring matter, which extended into the vessels." This was a case of pericarditis, in which the patient was bled most enormously six times in seven days, and 67 leeches and 2 blisters applied in the same [illegible]— on the seventh day the patient took refuge in death. A cardiac murmur, probably anaemic, was heard on the third day of active treatment & was held to indicate further bleeding, which soon put a simultaneous termination to the disease & the patient. It is very unfortunate that Andral did not open the heart oftener in

his post mortems, his accurate observations would have been of the greatest value in this connection, & combining ante mortem history with autopsy, would have avoided the source of error in Dr. McGill's notes.— The case quoted illustrates Dr. Meigs' remarks upon the influence of hemorrhage (or excessive venesection) in producing the heart clot.

Both Drs Meigs & Fauvel describe well the appearance of the heart clot, so familiar to us all, when "whipped into cords by the threshing action of the chordae tendinae" or "grooved by the passage of the blood currents" Dr. McGill has noticed that the clot is most usually attached to the apex of the ventricle by a slender fibrous band, with arms extending into the aortic (or pulmonary) orifices, & perhaps through the auriculo-ventricular openings into the appendices

auricularum. To my mind these attachments & appearances are strongly confirmatory of their ante-mortem origin.

4. It would be improper for me to fill my limited pages with details drawn from authors so familiar as Meigs, Tanner, Bennett &c; enough has been quoted to establish their opinions upon the subject. I will however briefly relate, from memory, the circumstances of a death which I witnessed, & which made a powerful impression upon my mind, being one of the very rare instances of the fatal results of chloroform.

Wm. H—, a soldier, was admitted into Patterson Park U. S. Genl Hospl with a gun shot wound of left forearm. Gangrene & phlegmonous Erysipelas followed, pus burrowing

among the parts of the carpal articulation & disengaging the bones, one by one. The patient had endured, with great fortitude, the extraction of three of the carpal bones, at different times - and it being evident that the remainder could not be saved, the removal of all, by a single operation, was determined upon, & chloroform was administered accordingly. The usual precautions were observed, the pulse being watched by one surgeon - while another administered the anaesthetic - all appeared to be going on well when, as the agent was beginning to exhibit its influence, the patient was seized by a violent tonic spasm, taking the form of Emprosthotonos, & lasting about a minute & a half. This gave way to regular breathing, as such attacks, under like circumstances, generally do - but the pulse

could not be found after the spasm. The chloroform was at once discontinued, but the breathing grew less & less, & finally ceased altogether — Artificial respiration being resorted to, breathing was restored, and some thirty inspirations taken, unaided — but the heart never started again, although efforts to resuscitate were continued until rigor mortis had supervened. A post mortem examination disclosed no disease of heart or lungs, but a large, hard, white clot filled the right ventricle, clogging the tricuspid valve. Now what was the immediate cause of this man's death? Mr. Druitt, in his Surgery, states that the heart is sometimes stopped by the paralyzing action of chloroform, & death ensues — but it seems to me probable that the same paralyzing cause which stops the heart, should stop the diaphragm

& intercostal muscles, the origin of their nerves being so nearly identical — I would rather suggest this explanation; the heart partook of the general rigidity in the spasm referred to, the blood stopped within it & coagulated (Chloroform certainly makes the blood more coagulable), on recovery from the spasm the heart struggled ineffectually to contract, but only increased the firmness & size of the clot at every systole — and death speedily ensued. This man's general health & strength were remarkable, his appetite was good & "digestion waited on appetite" & from his long confinement without exercise, his blood was no doubt in a hyperinotic condition, & predisposed to coagulate on opportunity being offered.

5. The formation of these clots may be accounted for in two ways —

blood being in a hyperinotic or hyperleucocytic (to coin a word) condition, we will suppose that through faintness, or the pressure of an over-loaded stomach, or the attitude of the patient, the flow of blood through the ventricles of the heart is momentarily retarded; a filament of the superabundant fibrin attaches itself to one of the chordae tendinae, just as would happen if blood were rapidly passed through a sieve. Many filaments may form at once, & growing by accretion at every impulse, soon completely block up the orifice. It is difficult to understand why the clot does not rapidly continue & increase, & death ensue much sooner than in some of the cases recorded, unless we admit here the agency of the colorless corpuscles. We may suppose that by their viscidity & "tendency to stick together,"[1]

[1] Virchow, Op. cit. p. 202

to cling to other parts under certain circumstances"
such as those present, they form a smooth layer
of pseudo membrane over the clot, over which the
blood may glide without impediment. In point
of fact, every clot I have yet observed has been covered
by such a layer, though that it was formed of color-
less corpuscles I cannot affirm. M. Virchow
states, as quoted above, that clots found in the ar-
teries often are covered by a layer composed wholly
of these corpuscles.

Or, secondly, the clot may have
been formed upon a free nucleus derived from without
the heart, in one of the veins for instance — or up-
on an agglomeration of the viscid colorless cor-
puscles which M. Virchow speaks of, & the pro-
cess of concretion proceed as described. If the
nucleus be a venous embolus it will probably be red

v. it is a fact that many white heart-clots are found with centres composed of a more or less softened red substance, exhibiting under the microscope, among much amorphous débris, some distinctive blood-discs. Perhaps both of these proximal causes have been present in different cases.

It may be objected that the blood is a vital fluid, and, while living, cannot coagulate. I grant the objection, quoad hoc, since coagulation may be called the death of the blood, and, while living, it certainly cannot die; but M. Simon's famous experiment of passing a thread through the adjacent femoral artery & vein during life, & the white arterial clot resulting, will certainly go to prove that life of the blood at one moment is no guarantee against its death at the next. Some persons may be found [illegible]

that the white clot is formed after death, of which it is then an effect & not a cause. It is difficult to understand what peculiar influence is exerted by the [illegible] endanguium of the heart & arteries, which produces in their contents a result so totally different from that following to the same fluid in other situations. Unless a peculiar action be granted to these cavities which sets at defiance the laws of chemistry, such an explanation of the phenomenon is a [illegible] assertion, the most naked empiricism, which, when unsupported by facts, is an attribute of quackery. For a white blood clot is not produced outside of the body without agitation. If such peculiar action be granted, it must either be the vital force (which, by its definition, ceases with life), or it must be some new agent, [illegible]

not admitted. "Entia non sunt multiplicanda praeter necessitatem" is an axiom as binding in Pathology as in Psychology, & I prefer & accept any reasonable explanation based upon known laws, rather than multiply unknown quantities pari passu with unexplained phenomena.

6. The symptoms attendant upon cardiac thrombus will scarcely need mention, being sufficiently obvious. Drs Fanner & Meigs describe a peculiar fluttering & rapid pulse, irregularity & acceleration of the breathing, cyanosis, anxiety of mind, coldness of surface &c. Dr. Meigs describes one case in which, the stimulus of the blood being lacking, the "besoin de respirer" was totally wanting & respiration was continued by volition only. When the clot is small & vitality abundant, the patient may recu-

ver, wholly or in part, & the clot (perhaps) be redissolved; but an exceedingly tedious convalescence is before him, & the least exertion may prove fatal. Alkaline solvents are recommended, particularly the carbonate of ammonia, tonics and gentle stimulants; and absolute quiet is enjoined.

7. The foregoing remarks may be briefly summed up as follows:

The white clots often found in the heart after death are composed mainly of the fibrin of the blood, separated from red corpuscles by washing in the rapid current which passes through the ventricles — sometimes containing a nucleus of passive venous coagulum or agglomerated colorless corpuscles — always covered in by a pseudo membrane composed of the

bably) the same corpuscles. Exhausting diseases, those proceeding from the dyscrasiæ, those necessitating long & close confinement in one position, and profuse hemorrhages, are particularly liable to terminate by this lesion, & do so terminate much more frequently than is generally believed. Death from thrombus may sometimes follow the anæsthesia of Chloroform. Diseases of short duration, on the other hand, such as acute pleuritis, & most rapid & acute affections which defibrinate the blood, are comparatively free from this danger. It is highly probable that all firm, white, fibrinous heart clots found post mortem have formed before death & been its immediate cause. The flabby, soft, black, yellow, or greenish coagula

may have been of post mortem formation.
The diagnosis is not difficult when attention is once rightly directed, but the prognosis is almost hopelessly unfavorable, and until we can find an agent which will redissolve fibrin once coagulated, in the living body, we must put our trust entirely in prophylactic

AN

Inaugural Dissertation

ON

Opium

SUBMITTED TO THE EXAMINATION

of the

Provost, Regents and Faculty

of

PHYSIC,

of the

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

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by

Charles C. Phillips.

of

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Session of 1865-6.

Opium; Its Effects, Modes & Doses of Administration & Modus Operandi —

No Remedy in the Materia Medica presents such a history as Opium — Unlike the numerous agents which have been brought forward for the cure or palliation of human suffering, with imputed virtues, to them, of which time & the progress of Science have disposed them or materially modified, it has never lost any of its éclat by the test of Experience or Scientific investigation — On the contrary, ever since the days of Ancient Greece, when the "Father of Song" charmed listening Multitudes with his inspired lays, it has steadily continued

its onward March, until its present exalted position was attained — Never losing but always gaining friends, who daily witnessing its wondrous & despite investigation, mysterious efficacy in alleviating suffering, have come to regard it without a peer and without a rival — One feels as if lost in the boundless areas of Infinity, when he contemplates all the misery it has alleviated, and the millions of dying hours it has calmed & soothed in the Past, & speculates on its mission for the Future, not destined to be fully accomplished, until Man shall cease to suffer — Mention was first made of it in Grecian history & if I mistake not the great prototype of Milton alludes to it under the name of Μηκων

(Mecconium) as having been administered during the Seige of Troy for its Anodyne & Soporific effects — The Saracens were acquainted with its Virtues & are reputed to have given it for the purpose of Narcotizing their Enemies — Scott in one of his historical Romances (the Talisman) in Speaking of the illness of the Christian Coeur-de-Lion, Says that Some drug was administered to the restless & impatient Monarch, which procured a refreshing Sleep — This, if not a mere fancy of "the bard of Avon" was most probably Opium — The Supposition is not improbable when we consider that it was known to the Arabs in whose territory the Crusaders were contending

for the possession of the Holy Sepulchre.
Those who have been but recently under
the very dissimilar circumstances can
well appreciate how acceptable it must
have been to the wounded Crusader,
lying on the parched plains of Palestine, &
painfully contrasting with the green
fields & genial Sun of "Merrie England"
The past few years presented to Opium
a broad field for usefulness, and many
a wounded or sick warrior can testify
that its duty was well performed. It
relieved their sufferings & calmed the
torturing doubts & anxieties concerning the
welfare of the home circle, & what to
the patriot is dearer still, the welfare

of his Country — ~~But~~ The limits of a thesis do not permit me to treat of its varieties, history or numerous preparations — I only purpose writing concerning its Modes & Avenues of administration, effects & Modus operandi, & tho' advancing nothing new, I shall deem my task well repaid, if permitted to be an humble follower in the path of those, who have spent their lives in mitigating the Sufferings of man & whose "footprints" encourage many a desponding brother Modes & Avenues of administration.

1st. The avenue by which it is most frequently given, is the mouth — In addition to being the most natural channel, the advantages are, that

Opium acts more promptly than when administered through other routes, is not so apt to leave unpleasant sequelae, & can be prescribed in the crude state or in any of its preparations, solid or liquid.

2nd Per anum. Frequently it is impossible to take the drug per vias naturales, or it is otherwise so unpleasant ~~to~~ as to more than counter-balance any good that might ensue from its use. It happens, also, that the stomach refuses to retain it, because inflammation, or deglutition is impossible, or the practitioner is desirous of prescribing it for some local affection as cystitis, flooding etc. etc. Under these

Circumstances he resorts to enemata, & selects some one of the fluid preparations, such as Laudanum (which is generally preferred) and as the tincture is apt to irritate when applied alone it should be mixed with a solution of Starch or gum Arabic, in the proportion of Sixty or Seventy drops of the former, to a tablespoonful of the latter. This is the best Method of prescribing the Drug in cystitis, dysentery etc for the parts get the full benefit of the dose by direct absorption - It may also be applied in the form of a Suppository - Two or three grains of Opium is made into the form of a cylinder with Soap and

then introduced into the rectum - It is useful in painful affections of this or some neighbouring part -

3rd. Endermically. Morphia or some one of its Salts should be selected - It can be applied to the undenuded surface by friction, but its action thus is too uncertain & slow - A better method is to draw a blister & sprinkle the Morphia on the denuded surface - Morphia, it is stated, acts more promptly thus than when given by the mouth - But it would not do to prescribe the Morphia in this way when the constitutional effects are desired at once, as too much valuable time might be lost in procuring the blister -

Sprinkled over the Epigastrium, it is
Said to be very efficient in cases of
Sick-Stomach — Some writers Say that
when the Constitutional effects are
desired by the endermic Avenue, it
is best to apply the blister to the Nape
of the neck, but I should hesitate long
before blistering in that region on account
of the intolerable inconvenience it would
cause the patient —

4th By inoculation & injection Sub-Cuticle —
The patient may either be inoculated
with a Concentrated Solution of Morphia,
or one of its Salts, or an ordinary dose
of the officinal Solution may be intro-
duced under the Cuticle by a Syringe
made for the purpose — This is an unusual

mode of administering it in colic. One would at least lose no time in drawing a blister & giving them it is said to act even more promptly than when administered per vias naturales.

5th And, finally, opium may be smoked & inhaled into the air-passages. It is extensively employed in this way in the East, by the luxurious & sensual Turks for its pleasurable effects, but I am not aware that it has ever been prescribed by the professional. Possibly it might be smoked beneficially in asthma & being inhaled into the air passages & cells prove useful by gaining the preoccupancy of the seat of the disease to its exclusion. This, however, is merely

hypothetical & even if it could be prescribed with some prospect of a good result, the physician should weigh well his moral responsibility, as he might be the means of making his patient's "last state worse than the first".

The Effects

It may be stated in general terms that Opium is primarily Stimulant & Secondarily Sedative & Narcotic. The Stimulation being inversely proportional to the dose, while the Sedation & Narcotism are proportional. There are some interesting facts related of its effects on the lower animals. It is said to produce none on the ~~[illegible]~~ invertebrate, while on the lower vertebrate it produces convulsions. As we ascend the

Scale, & approach Man the highest typse of this class, we find that Monkeys & Dogs are very unsusceptible to its influence, five hundred grains having been administered to a Monkey without any result - This is curious for we would reasonably infer from the Statements of Some Authors, that it produces Convulsions in the lower vertebrates, that it would have Some effect on the Monkey, especially as it is but one Step from Man over whom it has the most Marked influence - It is not My province, however, to treat of it as regards the lower animals, I have only to discuss its effects on Man - We will Suppose that a Medium dose has been taken - The first Sensation will be a feeling of warmth in the Stomach and

fulness in the head, and after a varying
period of from ten to twenty minutes, it
will be observed that the temperature of
the Skin is elevated — the pulse increases
in fulness, frequency & force & the respi-
ration equally & rather proportionally
hurried — The intellectual and emotional
functions join in the excitement and
are elevated to a Standard commensu-
rate with the individual Capacity.
The judgment is clearer — ideas more
brilliant and diction more copious —
Memory which seemed loath to recall
aught but unpleasant reminiscences,
now pages in review the green oases of
Past — Childhood with its pure pleasures —
Youth & its hallowed ties — Hope lifts

the lowering clouds which enveloped the Future
& discloses the horizon decked in rosy hues—
Care vanishes & is replaced by the most
pleasant remembrances of of past hours and
the brightest anticipations of future joys—
The capacity for enjoying the beautiful in
Nature, literature & art is augmented—
He feels nobler, purer & better and is inspired
with the desire to do great & good deeds &
to benefit his fellow— The pleasures experienced
are of an intellectual order— Brilliant fancies
softened & subdued by its hazy influence
haunt the poet's mind— The literary
world, those who love to roam in
"Dreamland" owe it a debt of gratitude—
For De Quincy confesses that it gave his
dreams their splendour & inspired him

with that classic diction in describing them, which has made the dreams finales in the English language - It was to Coleridge the Promethean flame which kindled into existence his enchanting Christabel, a poet's hazy dream of loveliness, & the prototype of that visionary beauty subsequently elaborated by Keats & Shelley - The dramatist Shadwell told it "to people his sleep" with brilliant dreams, and it is reputed that blind Homer was not unacquainted with its virtues - The pleasures given by Opium are of a more intellectual type than those following the use of alcoholic stimulus - The mind is elevated par excellence by Opium, & the sensual & animal functions by alcohol -

Alcohol does stimulate the intellectual functions but not to the same degree as Opium, nor is the stimulation as refined - Opium exalts & spiritualizes the passions & everything gross & sensual jars the sensibility - It clears the judgment whereas alcohol robs a man of his self-possession & clouds his judgment - Under its intoxicating effects a person is either noisy, quarrelsome & rude or indulges in maudlin sentimentality - He seeks a crowd to indulge his noisy mirth. but under the pleasurable effects of Opium, some quiet nook to enjoy his pensive dreams - Finally, a person does'nt loose the power of coordinating his muscles - Cannabis Indica stimulates the intellect but the ideas are generally of a ludicrous

Character - The psychological phenomena
alluded to, continue for a variable period,
from an half hour to two or three hours,
according to the dose & susceptibility of the per-
son - They may be prolonged if the dose
is just insufficient to procure sleep - Syn-
chronous with them results the power to
bear fatigue, pain, hunger & cold is aug-
mented - After a time the intellectual and
animal excitement begins to decline -
The heart beats slower & slower - the
respiration becomes calm & deliberate -
the surface cool & relaxed and the
individual sinks to sleep, dreamy if the
amount is just sufficient to produce
somnolence; if larger, deep & profound -
After an interval which varies with

circumstances, the patient awakes generally with a feeling of fulness in the head attended with nausea & even vomiting - He is apt to be bathed in perspiration - has a feeling of dryness in the mouth attended with thirst and a total disinclination for food or any exertion - These results, however, are not incurable, for frequently the agreeable sensations continues for some time after, especially if the individual has been disturbed before the effects have worn off - All the secretions are diminished or suppressed by opium, except that of the Skin - The secretions of the Salivary glands, liver & stomach are diminished, and hence the dryness of the mouth & thirst, the clay colour of the alvine excretions & disinclination for

prod. The disinclination for muscular exertion is owing in part, I suppose, to the depression of the nervous centres following their stimulation. The bowels are constipated because the sensibility of the organic nervous centres is blunted & therefore they do not yield sufficient stimulus to the muscular coat for peristaltic action; and in part to the lack of secretion from the intestinal canal & the organs of digestion. The kidneys share the common fate, tho' morphia produces profuse diuresis in the lower animals & to some extent in man. The diminution of urine is compensated for by the secretion from the skin. The bladder from large doses or a protracted use of the drug is smaller

is rendered "either incapable of retaining the urine, or of thinning it off." I should not omit to mention the itching which sometimes follows the use of the drug, frequently interfering materially with the patient's comfort. It is due to determination of blood to the surface.

Various circumstances modify the effects of Opium. Some are remarkably susceptible to its influence, while others equally insusceptible. It does not produce sleep in some but on the contrary a morbid state of insomnia. It sometimes causes severe headache, nausea, vomiting & even purging, colic, neuralgia, & paralysis & such general distress that its further use becomes inadmissable. Persons suffering excruciating

pain or Mental Distress require large Doses.
Patients laboring under tetanus require
large Doses, as they are unable to take
much food & part of the Drug is probably
consumed in Nutrition. It loses much of
its power by long use & hence habit
exerts a considerable Modifying influence.
De Quincy confesses to having used at one
time between three & four hundred grains
per diem. Coleridge a pint of Laudanum,
and Mention is made of a woman who
used in addition to a considerable quantity
of crude Opium, three pints of Laudanum
per diem. In the East where a great
many have used it from Childhood,
Cases must occur where even greater
quantities are consumed. Travellers say

that the victims are known by the yellow hue of the Skin, by their shrivelled, expressionless face, glazed eye, the bending of the Spine forward & their haulting gait. I am not aware that the curvature of the Spine has ever been explained — I think that it might be produced, at least in part, by pure physical causes — In the East the drug is usually smoked, & the position of the body when thus occupied, the legs being semi-flexed & drawn under the body, which is inclined forward, is competent to produce the result — The same thing may be noticed in tailors & others whose business requires them to maintain the same or a similar position — I think that climate might

exert some modifying influence - both
& heat - are primarily stimulant & subsequently
sedative - It is well known that long exposure
to extreme cold or heat produces inertia of
body & mind - The inhabitants of the two
extremes, the torrid & frigid Zones, are
inferior physically & mentally to those of
a more temperate Clime. Therefore, I shld
imagine, that on account of this bodily &
mental torpor, they would require smaller
quantities of the Drug to produce somno-
lence. it being an axiom in Medicine, that
whenever a predisposition exists to any disease
the complaint is generated by causes which
otherwise would have no such result.
Of course great care must be used in
administering the Drug to infants -

very small doses are required.

— Acute Poisoning —

It will be readily inferred that the quantity requisite to produce toxicology is not a fixed one. It will vary according to modifying circumstances. Three or four grains has produced death, while on the other hand quadruple that quantity has been taken by persons unaccustomed to its use, without disastrous consequences. It has been stated that stimulation is inversely proportional to the amount, so when called to a patient who has taken an overdose, we must not expect to see any great excitement, and even if any exists, it will last but a short period. We will probably find the vital

powers very much depressed – the pulse slow – the respiration stertorous – the face suffused – the countenance expressionless & the pupils contracted. The patient evinces a total disinclination for any exertion & desires to be left alone. If not aroused, or if seen at a late period, the narcotism is still more marked – The respiration is more labored and the intervals longer – the skin cool & relaxed – and the heart beating slower, & still slower. These phenomena continue for three or four hours, ended finally, a state of complete prostration ensues & death from asphyxia closes the scene –

— Treatment of Acute Poisoning —

The first indication is to evacuate the

Stomach, which can be effected by emetics and the Stomach-pump. The latter should not be relied on to the exclusion of emetics, when undue depression has been taken. The best emetics for the purpose are Sulp. Zinci, Sulp. Copper & Ipecac - I should prefer a combination of Sulp. Zinc & Ipecac, as they act promptly and are not so liable to be followed by much depression - These should be aided by the application of cold water to the head in order to arouse the nervous centres - The patient must be kept in constant Motion - He should be walked & dragged about despite his piteous appeals for rest & sleep - Use must be made of external Stimulation and recourse can be had to artificial respi-

-vation as a dernier resort - The galvanic battery is useful for accomplishing this purpose by stimulating the phrenic nerves which urge the diaphragm to increased efforts. Strong Coffee may be given to stimulate the nerves - Supposing the stomach to have been thoroughly evacuated, the respiration becoming more natural, and the patient recovering somewhat from the immediate effects, his extreme prostration should be counter-acted by appropriate means - Carb. Amm. egg-nog, brandy, ~~[illegible]~~ wine whey & good nutriment must be freely resorted to - There is no known antidote - None which acts by chemical reagency - It was thought that Belladonna from the property it

possess of dilating the pupils would prove efficacious in combating the toxicological effects of Opium - It has been tried & proven successful in some instances, but I should not rely upon it to the exclusion of emetics etc.

"Chronic Poisoning"

The physician is sometimes consulted for what Dr. Wood appropriately terms 'chronic poisoning' - Opium is no exception to the general law, that everything which can benefit man when used rationally or moderately, becomes when abused potent agents for evil - It is strange that De Quincy & Coleridge, two of the most profound & original thinkers of the day, should appear as such

Melancholy Examples of Criminal indulgence in the use of Opium - But Nature Severely punished the gross infraction of her laws, and heaped upon them long years of torture, as the avenging Nemesis. The cure in such cases of Chronic poisoning is almost entirely in the patient's own hands - He must break his own fetters, if he would be free, & few have that indomitable determination & force of will, requisite for the task - The heroic plan would be unadvisable here, for he might perish in a condition simulating Delirium tremens - He must lay Siege to the tyrant, gradually contracting his lines until he conquers & is free -

suppose he has been consuming five or six hundred drops of Laudanum per diem, by using two drops less every day, he may be cured in less than a year, provided he has the determination to persist. The physician under some circumstances may think it advisable to cut off the supply of Opium at once, & substitute some other Stimulus for which the patient has less partiality, and then gradually stop its use. He should in the meantime be well nourished, urged on to the conflict by appeals to his self-respect, and finally, encouraged in his struggles by kind words & approving smiles. Doubtless, many an erring brother now fills an unhonored grave, whose fate would have been

for happier, had he been aided in his struggles for regeneration by the sympathy of his fellows.

— Modus Operandi —

The manner in which all Medicines produce their effects on the economy belongs to one or two of three classes. They are said to act Mechanically when the result is produced by mere contact; Chemically, when they form reagencies with other substances for which they have Chemical affinity; and Vitally, when the rationale of their Modus Operandi, is unknown. The action of Opium is classed with the last of these divisions. The conclusion that it is absorbed in order to produce its characteristic results;

is drawn from the facts that after its administration, it can be detected in the breath, perspiration & urine; that autopsies of cases of poisoning reveal no opium in the stomach; that nursing women under its influence have poisoned the infant at the breast; and lastly, that when applied to an isolated nerve no result is produced. Even the advocates of the doctrine that it acts without absorption but through its direct influence on the nerves, must admit its absorption in order to reach the nerves. There are no bare nerves. Its active principles have been detected in the blood, a fact which irresistibly leads to the conclusion that they could

only have gained entrance into the circulation by absorption-

How does Opium relieve pain, allay nervous irritation & procure Sleep?

When taken into the Stomach, it probably irritates the mucous membrane by its direct Stimulating contact, and in accordance with a late axiom, "Ubi irritatio, ibi fluxus", more blood is drawn to the part & gives rise to the feeling of warmth so frequently experienced. It is then gradually absorbed, transported to the heart, which it spurs on to increased effort & hence the frequency, force & fulness of the pulse- to the intellectual centres, which it stimulates & gives rise to the

psychological phenomena - The respiratory
Centre participates in the excitement,
the respiration is thereby increased in
frequency & the blood is consequently
aerated more rapidly & thoroughly,
thus contributing materially to the
feeling of comfort & exhilaration -
Accepting Dr. Ward's view of Stimulation
1st. function increased - 2nd. perverted -
& 3rd. depressed, this would be the first
Stage - As the nervous centres are
Stimulated & consequently congested to
some extent, their power to receive &
radiate painful sensation, is obtunded
& hence the feeling of comfortable
Comfort - The Stimulation continues -
Sensibility is obtunded and the

functions are prevented giving rise to dizziness, perverted vision etc - If the stimulation goes further, the centres become more congested - Sensibility is still further blunted, & nervous stimulus to the economy is interfered with, & we have a calm which finally deepens into sleep - All these results are produced essentially by stimulation, the subsequent depression only occurring after the immediate effects have worn off, and agrees with the general law, that depression follows stimulation, because when an organ has been preternaturally excited, it loses in a measure after the excitement has worn off when

withdrawn, its susceptibility to ordinary healthy stimulus & requires sometime to respond to it. Sometimes a patient is restless & wakeful from some nervous irritation & is put to sleep by a dose of Opium too small to have any such result upon the same individual in health. This is probably ~~produced~~ produced by equalizing the nervous stimulus & restoring the equilibrium. The irritation which was confined to one point & by its concentration rendered the patient more sensible of its presence, is distributed throughout the system & its power being thus weakened by dividing into smaller forces, is incapable of harassing

the patient - Those who advocate the theory that Opium produces sleep by contracting the Calibre of the cerebral arteries, through its influence on the nerves supplying them with Stimulus, thus lessening the amount of blood in the brain, must admit that theoretically at least the Drug should be prescribed in acute inflammation of the brain and in those diseases which we know contra-indicate its use, the rationale of which contra-indication is explained theoretically as well as sustained empirically by adopting the Stimulating theory - The toxicological effects also explained by this

theory – We have just a high but
brief period of excitement, which
rapidly advances to coma consequent
upon deep congestion of the nervous
centres – We will have to admit,
however, that its Modus Operandi
is shrouded in mystery – Its action,
says a learned member of the
profession, "is beyond our ken &
in theorizing we get beyond our
depth" – Possibly, the investigations
into the Modus Operandi of Medicines,
which are now being made by some
of the master minds in the profession,
will erase the term "vital action"
& thus clear up the doubts concerning
Opium – But now vague speculations

& their analogies are useless - They will only show positively the ignorance of their forefathers - I had proposed in the outset to include within this thesis, the therapeutical indications for the employment of Opium, but I have already exceeded my limits & will refrain from further encroaching upon your valuable time - The physician who understands its physiological action can draw rational conclusions in regard to its therapeutical applications - In his hands it is an invaluable remedy but is equally potent for evil in the hands of the ignorant - If it is the panacea, if there be such a thing, for there are few

diseases out of an almost limitless number, in which it may not at some stage be beneficially employed - The physician's lot is at the best a hard one - He is not like the Soldier who is cheered on to the performance of duty by the inspiring shouts of Comrades; Nor like the orator or Statesman who have incentives in the approbation of a Nation - The Soldier, the orator & the Statesman know that their deeds will brighten the pages of history, and their names go

"Sounding down the ages
Sung by poets, penned by sages" -

But the physician is unknown beyond a comparatively narrow circle and is sustained in his contest with the "Grim Monster" only by a sense

of duty & the noble desire to benefit Man — It is then consoling for him to know that he has in the peculiar drug, such an auxilliary for combating disease & the pleasure he derives from relieving suffering humanity, is far greater than if he swayed the councils of a Nation or wore the snow white plume of Navarre —

Respectfully Submitted
Charles C. Phillips
Virginia —

AN

Inaugural Dissertation

ON

Vulnus Sclopeticum.

SUBMITTED TO THE EXAMINATION

of the

Provost, Regents and Faculty

of

PHYSIC,

of the

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

Doctor of Medicine,

by

Robert J. Henry

of

Maryland

Session March 1st 1866

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Gun-shot wounds.

A treatise upon gun shot wounds is intended to include those injuries which are received from small shot, minnie balls, cannon shot, grape; canister; chain, shell — splinters, and other agents which mutilate and destroy human life. Wounds produced by these means are often productive of more or less injury to life, either resulting fatally, or remotely causing a disorganized condition of the various tissues, giving rise to complications of various characters which last often during a patients life — The powder used for exploding these missils often produces grave

injuries - It is in some cases fine + all the grains are not burned before they are expelled from a gun - That used for military purposes is much coarser and if this should strike an individual its results are serious - It is however rare for these grains to burn the tissues, from the reason that it is used for — cannons which are generally fired at long distances. Should it however happen, all the grains should be picked out, then bathe the part well with tepid water, being careful to have picked out all the grains or they will be dissolved and run together and produce —

discoloration - If this should happen the part should be bathed well with soothing applications, one of the best is — ℞ Aqua Calcis.

Linseed Oil. —

Bird-shot. They produce the most serious results. A bullet fired at a much shorter distance will produce far less disastrious results - They fly in a body and striking the flesh ~~the~~ mutilate & lacerate much more than a ball. If an artery should be wounded, ~~hemm~~hage may follow, or remotely aneurism - In passing thro. a vein, gangrene, or even phlebitis may result - The lungs may be wounded - and so —

disastrous results follow. In a few hours, the patient will be in a comatose condition, insensible, but as a reaction comes on, he will improve. When they penetrate the skin it is advisable to remove them. Penetrating the eye it is almost impossible to remove them. The only means that can be adopted is to contend with the inflammation and sustain the patient, and use cathartics; among the best is the valerian sol. of chinin.

Minnie Balls. These wounds involve serious complications. They have the character of a contused, lacerated, and punctured wound. The disorganization of the parts always follows these balls in entering the body make a hole not

much larger than the missile and on their exit a very large and lacerated wound is made. It indents the skin and carries it before it, and on the opposite side it will be dragged outwards; here, often they lodge. They do not always pass thro' in a direct line - a bone may be struck and the ball glance, and glide entirely around ... Ther member. Very often they take the course of the bones; it has been found to strike a rib and pass entirely around it and lodge in the process of the vertebrae. Some of the most remarkable instances are on record of the course of minnie balls. When a bullet has lodged in the vicinity of a large artery, a tourniquet should be

placed upon the part and kept there for some days, in this way you will be always ready to suppress the flow of blood at a moments warning. It is said that wounds produced by these balls are the most dangerous, and critical in their results and from those which I have seen, fully concur with the assertion. Balls are burried frequently and never found, often they are hidden near a bony process and there remain for a length of time. They do not often inconvenience the patient or create much inflammation, unless lodged in a bone, or very near the skin. They often approach the surface and are extracted or are discharged spontaneously

A piece of the clothes is often carried into the part. Often a watch is struck and the ball is modified in its form. A button not unfrequently is also struck. A patch of cloth is thrust before a ball and in its passage, it glides by leaving it behind. Then it collects blood & forms a plug, creates inflammation & irritation. Gun-shot wounds like all other contused wounds seldom bleed freely, even tho. the vessels be completely severed. The cause of this is, that the arteries retract, form a coagulum, and bury themselves among the cellular tissues. When a ball severs any of the great trunks

as the carotid, carotids, femoral, brachial etc. hemorrhage at once follows and unless it is immediately arrested death ensues. Here then is no chance for coagula to be formed. An artery may be wounded and not bleed for some days, owing to a collection of slough which forms a plug. It is by no means rare for secondary hemorrhage to come on during this period and in this way a patient may lose his life. These coagulas generally detach themselves in from four, to six days, and during this interval too great a vigilance cannot be kept. The veins also share not unlike the arteries, be-

always more or less injured.

Grape Shot. These being large are more dangerous. The danger increases in geometrical proportion. Here we are to look out for secondary hemorrhage in from four to six days and in all cases apply the tourniquet.

Shell. Almost always a shell has exploded ere it strikes its object, thus fragments are given off. Wounds from a fragment of shell are often very extensive, being lacerated, contused, and mangled. They are very likely to cause hemorrhage, but not so much so as other missils. Sometimes they pluck an artery and thus cause hemorrhage

Cannon Balls. Generally they are round

ing of fatal lesions, often a man is killed by the mere shock. When it strikes a member it carries it away, and moving with unspent velocity there would be a good deal of hemorrhage, it acting as if severed by a knife, the muscles hang out. Moving with spent velocity the results are even more terrible. The shock is very serious and is almost always attended with fatal results. The bones may not be broken or any vessels destroyed, no reaction comes on and the patient dies. When we have any chance for his life, we must sustain it by stimulating and other appropriate means. The patient should

be removed to a comfortable place as soon as practicable and when reaction comes on amputation should be performed. The after treatment should be to promote the healthy action of the parts around, cold applications and other appropriate remedies

Treatment.

The first thing that requires our attention is to suppress hemorrhage, and as soon as possible extract all foreign bodies. If hemorrhage should come on and the flow of blood be large it is probable that one of the great trunks is wounded and should this be the case it will require the most prompt attention. For the great trunks

a tourniquet should be applied so
as to suppress the flow of blood, then
cut down upon it and place a
ligature above it. For hemorrhage
from the lesser arteries the usual
astringents will generally do - A lent
must into the wound (made of com-
pressed sponge) and saturated with
a Sol. of Per Sulph. Ferri will coagulate
the blood and form a filing, or when
this preparation is not at hand any
of the astringents will do. The preparation
should be given to Liq. Ferri Per Sulp.
and Per Chloride of Iron. The properties
of coagulating the blood and retain-
ing animal fibre by these two
preparations is unsurpassed. If the

vessel should not yield to these measures the part should be laid freely open and a ligature applied. Very often after the lapse of seven or even ten days a hemorrhage will recur, and during this period the patient should be closely watched. After having suppressed the recurrent case the next thing we must turn our attention to, is the extraction of foreign bodies. The wound should be examined by the finger or some one of the probing instruments. If it be a deep one a long probe will have to be used, among the best is Nelaton's which is provided

with a porcelain [illegible] which becomes
stained with lead and reveals its presence
and also the one which is filed at
its extremity. A ball is often divided,
a bone splinter, a piece of the
cloth carried into the wound all
of which should be promptly remov-
ed. It is not good practice to be
too officious in the immediate --
removal of these substances, for
their presence does less harm than
repeated early attempts to extract
them, resulting [illegible] results. We
had better await the establishment
of suppuration then they may be
spontaneously discharged, or
not the probe may be inserted

more easily and with much
greater facility. The patient should
be kept at rest, in bed since the first
and if the pain be severe very often
the Watery Solution of opium will
quiet it. A poultice may be applied
saturated with it. After the lapse
of two, three or four days rigors
take place, blood accumulates
parts become tense, hard, painful.
Then an incission should be
made (early) avoiding the vessels.
The discharge is a mixture of
dark blood & pus which acts as
a foreign substance and its
removal acts great relief to the comfort
of the patient. ———

Forceps. There are many kinds now in use, the majority of which are too large and clumsy for general use. They fill up the openings & allow no room for their blades to expand, thus making them difficult for manipulation — It is perhaps a waste of words to here describe the different kinds used, as they are familiar to all of us. The instrument furnished in the pocket case with claw point, & the ordinary dressing forceps are more generally used than any others. Bullets sometimes e. in the bone, where it has been proposed to use the trephine

but the operation has proved so very painful that it is seldom or ever practiced. After the removal of foreign substances the next in order is the

Dressings.

Cold applications are of the greatest value. Many surgeons have used them of late and have found the most beneficial results to follow. The part should be kept constantly saturated by the agent. I have seen many cases when it has been applied and in every one the most happy results have followed. It is one of the most soothing and comfortable applications used.

very often the case that severe inflammation supervenes causing intense pain, distension, heat, hardness &c and its application to this stage is highly salutary. It was known to the older surgeons, as "Blondus" published an essay upon its virtues as early as 1542.

Emmolient Poultices are also much used. They should be applied when the inflammation runs high and until suppuration is thoroughly established and in many cases until it has ceased. Flaxseed, Elm bark, Bread & Milk are among the best applications. Chloral & Potash, for very long

can advantageously used. During the stage of granulation it is a most excellent application. It promotes a healthy secretion and a union of surfaces - possibly that of second intention. As a general application it is used in strength of about three to five grains to the ounce of water. Opium - Made into a watery solution of about one grain to ounce of water (boiling) macerated and strained is very frequently used. Many surgeons laud its virtues very highly and advise its use to all lacerated, unhealed, - surfaces. Its action is that of a sedative stimulant (gently) and is a [illegible]

of healthy granulations.

Liquor Sodae Chlor. It is often the case that wounds become purulent and gangrenous, requiring some application to remove putrescent parts and promote a healthy secretion and condition. This is accomplished by the application of this preparation. It should be constantly used in such cases where the parts are unhealthy or even to keep up a proper condition for granulation and cicatrization. The best mode of applying it is upon lint or soft linen saturated with a solution. About one to four drachms to the

water or if that should be too weak
it should be used in full strength.
It acts as a slight escharotic +
disinfectant for which purposes it
is generally used.
As a disinfecting agent the Chloride
of Soda is more valuable than the
Chloride of Lime. In the sick chambers
& the sick especially in the infectious
diseases, suppurating wounds and
gangrenous conditions it will be
found highly useful. The preparation
which is used and that which I prefer
is known as "Labarraque's Disinfecting
Liquid" or "Liquor Sodæ Chlorinatæ."
Per Manganate of Potash is also much
used. In cases of sloughing, unhealthy

and gangrenous wounds. It is used in about the same class of cases as the Liq Ferri Chloridi at this. somewhat stronger. The salt is a soluble substance which is made into a solution rendering it more convenient for use It is remarkably certain and efficient as a disinfectant. Its action is that of a deodorizer, antiseptic, and escharotic. The employment of it as a disinfectant and prophylactic is limited mainly to topical applications, by means of evaporating cloths saturated with a solution. Its oxidizing and antiseptic effects upon organic and putrescent matter is very rapid. It is a most

sensitive test for the presence of organic matter, with it it will oxidize freely. The preparation which is now used and is the best is "Bowers Solution of Permanganate Potash". It may be used in various strengths, from a drachm to the pint of water, or in full strength.

Creosote. Warm applications consisting of about half a drachm to a drachm with a pint of water is very often used. I have seen it applied with good effects. Its action is that of an astringent antiseptic and stimulant.

Local Applications. Fomentations warm poultices are valuable.

Poultices are perhaps more useful than fomentations as they retain their heat much longer.
In applying a poultice it is well to remember that it's heat should exceed somewhat, that of the inflammed part.
Charcoal & Yeast made into a poultice in about equal quantities is an excellent application to foul gangrenous & phlegmonous wounds. It corrects their fetor and improves its general condition. It also hastens inflammation by resolution, suppuration and granulation. As a disinfectant, antiseptic and deodorizer, for use in purulent parts &c.

local purification, fresh charcoal is of acknowledged value. I have seen this poultice much used, and in every case with the happiest results.

Pulv. Linum. (Flaxseed) in its action is a demulcent and emollient. The meal mixed with warm water forms an excellent poultice.

Ulmus + Oatmeal are also used but are secondary in rank.

Oakum. During the late war this agent has been used in great quantities, both as a primary and after dressing. Its virtues have been very highly praised.

Special Parts of the Body.

Head. Wounds in this part of the body are by no means rare. The scalp, being vascular and abundantly supplied with nerves, is apt to suffer considerably. The arteries are near to the surface and of considerable size. An artery of the head when wounded does not retract, as do those, but it bleeds copiously. The cellular tissue being firmly attached thus prevents it from bunching itself up as in other cases. If an artery be found to persist in bleeding a ligature may better be placed around it, even if some of the tissues are included. These wounds should be dressed

very simply, pledgets of lint &c
It is a very bad plan before they
close up and in many cases a union
is premature. Some surgeons have
recommend the employment of
adhesive plaster but I dont think that
it should there be used. The application
of sutures is much better either the
silk, or silver, afterwards use the
pledgets of lint. Sometimes it
happens that a flap is made
(raised) of an angular shape
perhaps by a stroke from a sabre
which forms a pocket for the pus
which is being poured out; and to
prevent it from burrowing into the
tissues as a scalpel should be carried

through its base and allow a free egress, the hair should always be removed, and parts kept as clean as possible.

Face. They may involve the eyes, nose, lips, and glands. The eye may suffer considerably even burst, or both eyes may be destroyed. The nerves when wounded often result in some affection of the eye, especially the Portia-dura, and Supra-orbital, the former paralizes the patient and closes the eye. The glands may suffer, or the ducts, causing fistula. When such is the case the saliva is passed from the wound copiously, and to remove the trouble, the [illegible]

masseter muscle and introduce a plug, close the wound by twisted suture and thus cause the saliva to be poured into the mouth. A delicate probe dipped into Nitric Acid which forms — a nitrate of silver, and inserted into the wound also tends to close a fistula.

Lips. As a general thing they bleed a good deal. If the coronary artery is wounded it should be secured. If the parts should be cut they should be closed with the twisted suture. It is generally practiced to place a suture on the inside of the mouth and adhesive plaster on the outside when such wounds occur.

Nose. Are often attended with serious

results. In most cases cleanse the
part well and gather the lacerated
fragments together and close with
delicate sutures.
Eye. May be totally destroyed or more
or less injured. In most cases keep
the patient on low diet, and combat
inflammatory symptoms as they arise.
Leeching and the Watery ol. of Opium
are among the best means.
Chest. Wounds in it's vicinity are very
dangerous owing to the great likelihood
to thoracic age. The lungs are most
frequently wounded and often fatally
The lung becomes engorged and
hepatized. We close the wound with
adhesive plaster, and suppress

hemorrhage by the ... mechanical compression, styptics, or ligation. Cold applications are very highly recommended, when hemorrhage is in course. The patient should be kept in a perfect state of repose, and if pain should be intense recourse should be given to the preparations of opium. Dovers powder will be beneficial.

Heart. Wounds of this organ are almost always fatal. Instances are on record where recovery has taken place and one related by "Latour" where a ball remained six years in the left ventricle. These wounds should be closed and also the blood accumulate within the pericardium

Thorax. Wounds of the lungs are by no means rare, but are attended by a good deal of danger. The patient is seized with great difficulty of respiration suffocation, haemoptysis &c. The patient should be kept in a state of repose and nature allowed to take its course. The only treatment that can be instituted is to nourish the patient properly and combat hemorrhage with the usual haemostatics. The Persulphate & Perchloride of Iron are valuable in these cases.

Abdomen. A ball may pass through the intestines and not wound them. These wounds are attended with a great deal of nervous shock, and consequently prostration

the patient very much. When the viscera is wounded the omentum protrudes often much lacerated. A wound of the peritioneum is very dangerous but not near so much so as one of the intestine. When the viscera protrudes and the opening is not large enough to return it, an opening should be made, just as is done for hernia and thus return it.

Treatment.

Let the patient rest, give him nothing for a week or even ten days. Afterwards make use of a nutriment enema, apply leeches, warm fomentations, pain if it should distress the patient, by a cataplasm, keep the part clean, secure any vessels that

may bleed and trust to nature for the rest.

Stomach. When the stomach is wounded the patient will almost always vomit a mixture of blood and food. The prostration afterwards is very intense. The patient should be kept quiet and food furnished by enema.

Intestines. They are not always fatal. Wounds in the upper part are more dangerous than the lower because they are more vascular. If the lower intestines are wounded an artificial anus may form and the patient live for years. We may nearly always diagnose these cases

in the direction of feces; in order
they protrude.

Treatment.

There are many plans advised by
surgeons; Bell says, "do nothing".
Gross says "dilate the wound and
draw out the intestine" - &c The
simplest plan here seems to be the
best, and when it is practicable
draw out the intestine and stitch
the glove suture, folding the edges
so as to bring the peritineal surfaces
together, and in this way a union
may be accomplished. Keep the
parts clean and trust to nature
for the rest. Warm fomentations
[illegible]

advantage.

Liver. It is a brittle organ and easily mashed, often a contusion injures it, if so there will follow effusion, congestion, and peritonitis. These wounds are not necessarily mortal, but if it is deeply cut the chances are very small. Jaundice almost always follows and is a true sign for diagnosis. The treatment in these cases is as has been described in other like cases, but we must watch out for any dangerous symptoms and treat them promptly.

Kidney. These are rare and are attended with a great deal of danger almost always peritonitis ensues

When the kidney is wounded it may be seen to pass out with the urine blood thro. the wound and very shortly after, death will follow. These cases are treated as usual rendering the patient insensible to the constant pain, and irritation by anodynes treat inflammation and keep the wound open.

Bladder. When it is distended it is most likely to be wounded. The urine should be drawn off with a catheter and it allowed to remain in order that it may not pass its urine thro. the wound. Pack the wound with lint and in all cases keep the wound open.

Scrotum. These are not very common. The epididimus is the most important organ as it is very prone to inflammation. Pursue the usual form of treatment in these cases.

Penis. It is a very vascular organ. The uretha is apt to be injured and the urine is likely to infiltrate the surrounding parts. Hemorrhage is often troublesome, often it bleeds from extensive surface, a ligature should be applied, and if it continues introduce a catheter and bandage it. Use cold applications + keep the patient in the recumbent posture. Generally such wounds altho. they

involve the uretha get well very soon

Joints. They are lined with synovial membrane, and a case will scarcely ever be found where a knee joint is wounded, that it is not attended with a great deal of suppuration and even anchylosis. Very unpleasant consequences attend these injuries as the membranes are very prone to inflammation. It is almost impossible to keep the part still; motion always increases the inflammation. When a knee joint is penetrated it will discharge synovial fluid. In a case when it is layed open to the joint, the blood is poured into the

cavity, the joint should be [illegible] open and the bleeding vessel secured. From it there almost certain to result inflammation. It is the motion that renders these wounds so dangerous. The patient should be placed in the recumbent posture, be quiet, in a state of perfect rest, and the limb suspended to the ceiling, and close the wound with adhesive straps. Use locally the Watery Sol of Opium, and warm applications, cold ones render the parts more tense. If the patient complains of great pain follow by a rigor, then suppuration has taken place apply an anodyne

poultice and take off the [illegible]
straps, Suddenly pain will cease
then it may be inferred that pus
has infiltrated the tissues. Fluc-
tuation will be found, and then
the part should be thoroughly +
freely incised. Pyaemia often
here supervenes which is ushered
in with a rigor. If such is the case
the patient will soon be found in
a state of collapse, cold extremities
clammy sweat, pupils dilated and
the conjunctiva tinged as in
jaundice. The means here adapted
are to support the powers of life
by stimulation and nourishing
[illegible] but all treatment is of no —

[illegible] as [illegible] [illegible] [illegible]
result. I have seen many cases
but have seen none to result
favorably.
If anchylosis is apprehended the
limb should be placed in such
position that when recovery
takes place, it can be used. If
it be slightly flexed it will ans-
wer. Soft anchylosis often is
formed & it has been advised
by some surgeons to break it
up, but it is bad practice.
Wounds of the other joints are not
by any means so dangerous, as they
can be kept at rest. If a ball [illegible]
throughese joints amputation

Ankle Joint.

No' unlike the other amputation is necessary when opened.

Foot.

In wounds of the foot sometimes resection, but in all these cases the joints are distinctly opened, and the bone forming it is much injured, either resection, or amputation is of little avail.

Finis.

March 1st 1866

AN

Inaugural Dissertation

ON

Hysteria

SUBMITTED TO THE EXAMINATION

of the

Provost, Regents and Faculty

of

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of the

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

Doctor of Medicine,

by

C. M. Freeman

of

Maryland

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Hysteria

No disease demands a more thorough and practical knowledge of the practitioner, than Hysteria, and the origin and causes of none are more doubtful or more obscure; but it may be looked upon as only a kind of perverted nervous function connected with uterine derangement. It is an irregular and chronic disease, coming on by paroxysms and generally at the time of the suppression of the catamenial flow and attacking only those of an irritable and nervous temperament. The great liability to error and to mimic the symptoms of various diseases of a more serious

Character, is the reason why a perfect knowledge of it is so indispensable to the practitioner, (and particularly the inexperienced) for whom it is rather difficult to diagnose correctly between it and its assimilations.

Symptoms & Course — This disease is indicated by paroxysms, which occur at irregular periods, and which, in some constitute the chief signs of the malady; the health being tolerably good and sometimes almost perfect in the intervals. In others there is scarcely ever a complete exemption, even through a long course of years. The paroxysm is characterized by ensuing or rather setting in without

any pre-sensitive, arising from causes chiefly of a mental character.
The patient has a great tendency to imitation, in which she believes that she is afflicted with any disease which may strike her imagination, or she chances to hear of, or which may be the subject of general conversation. She also takes a delight in being ill, so as to secure the undivided attention and sympathy of those around her; and thus must we account for those marvellous and almost incredulous tricks which the patient is apt to resort to in feigning diseases. Sometimes the patient is sensible of a distress at the epigastrium or oppression about the chest

a ball the feeling of a ball ascending from the abdomen to the throat, producing a violent feeling of constriction and impending suffocation (This is denominated Globus Hystericus). The expression of the countenance is changed into a vacant stare; she throws her limbs about and twists her body into the most violent contortions, beats her chest and sometimes tears her hair. The features become swollen and flushed and she utters a cry which is compared by some to the baying of a dog. Again the body is thrown back into an arch, the muscles becoming rigid as in tetanus. There is during all

of this time an apparent want of consciousness, which is in some cases real and in others partial or assumed. The length of the paroxysms is variable, they vary from fifteen minutes to several hours; but after they have subsided, the patient breaks out into an immoderate fit of laughter or sobbing; which lasts until she falls into a deep sleep.

The paroxysm may consist of a deep coma, in which the patient lies perfectly motionless, with her eyes closed and being incapable of being aroused; the respiration is sometimes so feeble as to be scarcely perceptible and the surface being cool, the bystanders are apt

to think that she is dead. This comatose state may last two or three days, after which period it generally subsides, to return again at the menstrual period. It would not be diverging from my subject, to mention some of the principal varieties of diseases that Hysteria assumes.

Peritonitis — We find a patient complaining of acute pain in the abdomen, aggravated upon the slightest pressure, and she may have a hot skin, a quick pulse, and a furred tongue, or in fact all the symptoms that are attendant upon this affection. If this proved to be a feigned disease, and the practitioner

was to follow the treatment
laid down for the real malady,
such as blistering, leeching and
bleeding to syncope, it might
prove fatal. Then it is necessary
always to inquire whether the
patient ever suffered in the same
manner before, if she was ever
known to have been attacked with
Hysterical fits; and to prove by the
touch whether the tenderness be
excessive and if she showed as much
sensibility to the pain, when slight
~~slight~~ pressure was made, as when
it was firm? If this last prove to
be so, then the whole treatment must
be changed into purging the patient
freely, causing an assafoetida enema
to be thrown into the rectum and

in a day or so, the whole aspect will be changed and the peritonitis will subside.

Irritable Spine — A patient finds that she has a difficulty in walking, that she is easily fatigued, and the pain in her back is greatly aggravated by any motion: she gradually becomes disinclined to move and soon assumes the horizontal position altogether. The most acute pain is felt over some particular spot in the back, which the slightest touch will greatly increase if the patient's attention is alive to it, but which is not noticed if she happens to be otherwise engaged. So we perceive our diagno-

sis, as to whether the malady be real or assumed, must depend upon the nature of the pain, which, if it chances to be of a kind greatly exaggerated, is the characteristic of the Hysterical affection; in which the pain is much more acute and more superficial, than that of the diseased vertebrae, being seated in the integuments that cover the spinous processes. It is always best to humor the patient a little, but yet insist upon her trying to walk a little everyday and using the shower bath freely, and thus this affection may be cured.

Aphonia —— This is caused by the palsy or weakness of the

muscles of the larynx. The patient is not able to speak above a whisper, which most generally takes place after a severe hysterical paroxysm. This is not likely to be mistaken for any real laryngeal disease, for the respiration is not affected, and it often goes away as suddenly as it came.

Hysterical Breast — The mamma may become painful, tender and sometimes enlarged. The irritability is excessive and the patient shrinks as much from superficial as deep seated pressure. The treatment should be directed to the general state of the system and the

local uneasiness of broken light-
ly of or wholly disregarded.
Palsy, Hemiplegia & paraplegia
are often simulated by hysteria.
The sudden appearance
of the paralysis, without any
of the joint that accompany
the real disease, its sudden
disappearance and the supine
position of an Hysterical fit,
enables the practitioner to
make a correct diagnosis.
Hysterical affections of the
joints are very common, so
much so, that some of the
best of authorities, state that
four fifths of the supposed
cases of joint disease, which
occur among the higher class-

es are Hysterical. This statement shows the importance of the students being well acquainted with the peculiar features of this affection.
In all of the cases of joint affections there will be found indications of the Hysterical constitution, such as nervousness, an irritable and nervous temperament, imperfect nutrition, irregular catamenia or some uterine disorder.
The hip, knee and all of the larger joints are most frequently affected. The patient keeps the joint quite at rest, being afraid of the least disturbance. When the joint is moved

she will cry out with a greater expression of pain, than if there was actual necrosis or ulceration of the cartilages, but if her attention be diverted, the limb can be handled without her noticing it. The treatment is not local, but should be such as will be calculated to restore the nervous system to a requisite degree of stability, and correcting the disordered function of the uterine system, or any other viscus that may chance to be the seat of primary disturbance. Lastly I shall describe a case of Hysterical Knee that I saw myself. The patient was

a young negro woman, about eighteen years of age, who was inclined to epilepsy. I found her, with her leg considerably flexed, with a puffy swelling extending six or seven inches below & above the knee; and whenever it was handled or touched in the slightest degree, she would make an exclamation of great pain. I thought that it was synovitis; and would have treated it as such, had I not found upon inquiring that her catamenial flow had been stopped for some five or six months. When I mention the case and described the symptoms to my preceptor, he suggested that it might

be an Hysterical affection; and after carefully consulting the text books; I found that her symptoms corresponded with those laid down upon this subject. After using the usual means for bringing about the cure of Amenorrhœa and insisting upon her trying to walk a little every day; she recovered entirely.

Cons — The ancient theory ascribed the whole of the phenomena to uterine disorder, and named the disease accordingly. We read of disputes as to whether the womb with its appendages, or the nervous system were

the seat of the disorder? There is no doubt, but what the convulsive movements, mental affections and the unnatural sensations, are dependant upon some altered condition of the brain or some of the nervous centres; but it does not follow that the malady originated in that altered condition. We know that the Uterus and its appendages cannot of themselves determine the muscles to act; but if they be in an unhealthy or irritable condition, they may cause the muscular fibres to contract through the medium of the nervous system.

It is true that we often meet with amenorrhea, dysmenorrhea, menorrhagia, and other diseases of the uterus, without having this excessive disturbance of the nervous system, and a plausible reason cannot be assigned for this; but we know that there exists in some persons a much greater readiness to take on a disease, upon the application of the exciting cause, than in others. But it can with safety be said, that those who suffer from this disorder most, are generally those young women in whom the functions of menstruation are somewhat impaired, and who are naturally

of a feeble constitution, either from being debilitated by disease, or from a very effeminate style of living. Among the exciting causes may be ranked everything capable of producing a strong impression upon the nervous system; such as startling sounds, sights, surprise, terror, anger, grief, and disappointment. The sight of one female in Hysterical convulsions has thrown others into them, who were previously exempt from the affection.

Diagnosis — The affection with which Hysteria is most apt to be confounded is epilepsy. The most prominent diagnostic symptoms are, on the part of

the epileptic paroxysm, the unpreparedness of the patient, the sudden cry at the commencement of the fit, the frightful distortion of the features, permanent dilatation or contraction of the pupil, the darkness of the face, the foaming at the mouth, the diminution of the respiration, the shortness of the convulsion, and the profound coma that intervenes between the attacks. In the Hysterical, the symptoms are nearly the fac simile of the former affection, only they are greatly exaggerated and all of them seem to be assumed particularly the loss of consciousness. I have already pointed out the diagnostic

marks between it and the other diseases, it is most likely to imitate. The Prognosis is always favourable.

Treatment —— We must try to relieve the paroxysm and the most prominent symptoms, and use the means that are calculated to correct the exciting cause, and to allay the irritation of the nervous system.

In the paroxysm all clothes should be loosened and [illegible] restrain the patient so as to prevent personal injury. When in a comatose state, dash cold water in her face, pass ammonia under the nostrils, or any other irritant substance, If this state persists, apply sina

pins to the inside of the legs, and ice or cold water to the head. If the patient can swallow, administer a mixture of assafoetida, oil of valerian, compound spirit of ether, or aromatic spirit of ammonia. But as deglutition is generally difficult, it is best to obtain from all medicines by the mouth and use enemata, such as assafoetida & the oil of turpentine. In very obstinate cases Mr. Wood recommends the nauseating emetics, particularly tartar emetic. Where the pain is severe the use of anodynes are indicated, such as cannabis indica, Hyoscyamus, belladona, Stramonium conium and the internal use

of Chloroform. For the curative process, we must seek out the irritating cause and apply the proper remedies, most of which I have spoken of above. In amenorrhea, we must use the remedies that are calculated to bring about the catamenial flow, chiefly the emmenagogues, such as guiacum, oil of Sabinae, and tincture of cantharides and the local measures, such as the warm hip baths, a blister to the sacrum, Electricity, and the injection of a solution of ammonia. To correct the irritability of the nervous system, we must use the tonics, particularly Quinia when it assumes the

intermittent fever; but the metallic tonics usually prove to be the best, such as the salts of copper, zinc and silver. But the best plan is to change the patient's habits and to remove her residence. Such are the ideas that I have obtained from my text books and I hope they may meet with the approbation of the Faculty.

C. M. Newman

AN

Inaugural Dissertation

ON

Typhoid Fever

SUBMITTED TO THE EXAMINATION

of the

Provost, Regents and Faculty

of

PHYSIC,

of the

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

Doctor of Medicine,

by

Nathaniel Comegys

of

Maryland

Session 65 '66.

Most Respectfully

Fellow me gentlemen to lay before you for perusal and decision this feeble exposition of a subject of many theories and opinions made by the assiduous research of many wise and intelligent men of former ages feeling confident that any attempt on the part of graduates are worked upon and scanned with a lenient eye by our much respected and honored teachers of the university of Maryland. We would most respectfully offer these pages for their perusal and examination, dictated by no selfish or ill motive we

would beg that any imperfections that are herein found may be accepted not as mistakes nor to be remedied, as errors to be repeated through life but as the feverish and impressive imagination of youth without experience or practice. But humbly susceptible of improvement and advice from any of the paternity of our much respected profession. With this brief preface we will enter into the subject of discourse, The nature, Termination causes and treatment of Typhoid fever. This is a common febrile affection presenting a considerable diversity of symptoms; but recognisable in certain special characters and probably constituting in all its forms

one and the same disease.
The nomenclature of this disease is unsettled and perplexing. We accept the title of Enteric or Typhoid signifying that this disease differs from all other idiopathic fevers by a special or peculiar affection of the intestines, such as inflammation of Peyers patches and the glands of Brunner. Which almost essentially belong to this disease and a characteristic symptom. Although other fevers are liable too and are sometimes attended by disease of the bowels, symptoms.
The disease sometimes begins by a chill followed by symptoms of other fevers: but almost always comes on insidiously and gradually increasing

The patient is uncomfortable
complains of coreness of lower limbs
and slight headache. The skin becomes
heated above the natural standard
The face flushed the tongue if examin-
ed, will contain a whitish fur and
if asked by the physician to show
it will protrude it with a nervous
tremor and a disposition not to
protrude it beyond the lips. The
appetite is generally much impaired
and very uncertain these symptoms
continue until the disease advances
to a more malignant and impor-
tant variety, assuming all the
types of general fever, such as
frequency of pulse. Heat. Dryness of
skin. Flushed face. Pain in the head
Loss of appetite. Thirst and

and general weakness. The pulse sometimes reaches from 100 to 110 per minute the Patient is very restless with pains in the back and knees presenting a strong disposition to slide down in the bed. We also have bleeding at the nose although this is not always present yet it may be termed a characteristic symptom. But I do not suppose we should attach much importance to this as the elimination of morbid blood from the system must be an advantage. And nature furnishes us in many instances facilities for throwing off morbid matter from the system. Hence we can apply this Medicating Salve without the assistance of nature

our remedies in many instances would be valueless. A wise Creator bestows upon man many facilities for the benefit of his fellow being and without his intercession and aid the ambitious and haughty spirit of man must like foolish pride be buried in oblivion. We are diverging somewhat from our subject. But again we will try and find more important symptoms in the nature of our disease. The tongue previously moist and clammy now becomes dry and begins to assume a brownish color. Deglutition is sometimes painful and there is great difficulty in swallowing. The abdomen becomes distended upon close examination red spots will

often present themselves and frequently extend to the chest and lower limbs. These eruptions are very similar to Typhus fever although Typhus and Typoid are two distinct diseases. We will name a few symptoms in which they differ. In Typhus we have constipation the fever is milder and of shorter duration than Typoid When discharges are obtained from the bowels they are darker and more offensive. Rheumatic pains from the bowels sometimes occur in the latter stage of Typoid. seldom in in Typhus. In the latter complaint there is more stupor and darker color of the face and much greater debility the blood drawn presents a different appearance a top

of the buffy coat. The eruption in Typhous is different it generally commences earlier is not so elevated as the other is of darker color more of a spot. and does not generally disappear under pressure and is generally scattered over the whole body but more particularly along the course of the larger veins.
The inflammation of the glands of Peyer and of the other mesenteric glands as found in Typoid is not present in Typhous fever. The spleen too is much enlarged and softened in the latter disease. Some persons say the spots which are present in Typhous fever during life remain after death while no traces of those in Enteric fever

are perceptible. causes
Why can we not attribute the origin
of typhoid fever to the miasmata
as we frequently find persons
confined to ill ventilated houses
and those subject to the influence
of debilitating influences of animal
matter frequently attacked and
very susceptible of this disease
there is always a peculiar odour
exhaling from the bodies of typhoid
patients that is never present in
other diseases. This odour must be
attributed to the debilitated
condition of the patient and the
constant elimination of morbid
matter from the system which morbid
poison might be conveyed to others
The brain in typhoid fever is

generally materially affected.
Where the delirium is furious low and muttering we no doubt have inflammation of the brain. In a post mortem examination that I witnessed upon one occasion we found the brain and its meninges exhibiting marks of former inflammation and effusion of serum into the ventricles and on the substance of the brain. In the same subject found upon examination the glands of Peyer very much ulcerated. Tenderness to pressure of the abdomen and a constant disposition to lie on the back drawing the knees upon the abdomen a red and raw condition of the tongue. Low muttering delirium are phenomena very frequently met with in the advanced

stages of this disease, and conclusive proof of intestinal irritation and inflammation. The mucous membranes of the respiratory organs, frequently suffer some degree of inflammation or irritation and sometimes we find pectoral oppression and difficulty in breathing together with a slight hacking cough.

Prognosis.

When the disease does not exhibit symptoms of local inflam. too strongly it generally yields to antiplegistic treatment and terminates favourably. Where the brain and intestines both evince inflammation the disease must become very unmanageable and dangerous. When the cerebral

symptoms are unaccompanied by those of the stomach the patient seldom sinks so rapidly, as when we have both of these symptoms. Early and violent symptoms of cerebral disorder suggest much danger. Picking at the bed clothes. Paralysis of the eye lids. Distortion of the muscles of the face and low muttering delirium indicate cerebral inflam and a great degree of danger. Muscular prostration. Constant position on the back denote a stage of collapse, small frequent and weak pulse with excessive diarrhea with such symptoms as these existing the life of our patient will soon be brought to a close

treatment

In the treatment of the disease we have in question there are three considerations we must have in our remediate efforts. 1st To diminish the general force of the circulation and restore the natural actions of the excretory organs particularly those of the skin liver and kidneys. To equalize the circulation and prevent local congestion. To remove from and out of the system as far as possible all deleterious matter having a tendency to irritate and excite the system. Of these efforts the first must no doubt be of great importance and should receive early attention. How should we reduce the force of the

blood. Bleeding would naturally suggest itself to our consideration but we would recommend this only in cases of extreme plethora and violent cerebral congestion and if this be the cause of the increased action of the heart and arteries blood should be taken so to make a decided impression upon the system if the condition of the patient should justify it the pulse being quick hard and tense. The effort to be desired from taking blood depends not so much upon the quantity but upon the impression made upon the system. Blood taken in very small quantities allows the heart to accommodate

itself to the loss. It certainly must be a good rule in practice to apply our remedies with as little debility to the system as possible. And in asthenic fevers such as Typoid if we were to expend too much the resources of the system we would certainly bring the life of our patient to a fatal issue. The secretions which flow into the intestinal canal in all forms of fever are no doubt sources of irritation when suffered to remain, although in Typoid fever no generally have diarrhea. Purgatives are important remedies in all forms of fever. And the choice of the purgative is a matter of material interest in this disease. We

mined recommend the saline
purgatives as generally preferable
as they are milder and not so
liable to irritate the stomach. They
also have a tendency to allay febrile
excitement on account of their
refrigerant influence. The sulphates
of Magnesia and Soda, Rochelle salts
and such like are highly recom-
mended in febrile complaints. In
cases of this disease assuming
somewhat of a Bilious type, Calomel
should be administered, followed after
wards by a laxative, such as Bitar
trate of Pottassa, Sulp Magnesia,
Hersh and drastic purgatives do
great injury and should not be
administered on account of exciting
irritation or inflammation in

the alimentary canal. Diaphoretics we generally find to do much good in febrile complaints — particularly in Typoid as we frequently find torpor of the skin among the chief ailments and continues all through the disease unless checked by proper remedies. Our remedies would be in vain so long as this important function remained latent or inactive. Nitrate of Potassa, Tart Antimonials Liquor Ammoniac Acetates The Neutral Mixture and Effervescing are decidedly advantageous in this disease tending greatly to promote Diaphoresis. Digitalis in small and repeated doses is frequently recommended from 1/4

to ½ gr being administered every four or six hours must make some impression on the disease some of the preparations of — Veratrum, Dr. Norwood a distinguished Physician of one of the Gold mines — has a preparation consisting of VIII℥ of the dried root to one pint of alcohol and given in doses of from IV to VIII gtt every two hours This preparation is being much used as a controller of the heart and arteries. But care should be taken that it should not affect the bowels. Mercury we should suppose would not be applicable in all cases in this disease But in fevers where we have Biliary derangement the constitutional effects of Mercury would be of great —

advantage. In the early period of Typhoid where the skin is hot and dry. Sponging the body with cold water would be beneficial. In cases of local inflammation cold ablutions should not be applied except in cerebral affections where we would find ice or iced water to the head a very valuable remedy. But in intestinal inflammation we should on the contrary use blisters followed by warm fomentations to the abdomen. In all cases of fever we should pay particular attention to the internal organs especially the intestines. Firm pressure should from time to time be applied to the abdomen to ascertain the degree and location of the inflammation

Indeed at each visit this should not be neglected. Where the tongue in this disease becomes dry with red edges or shows any disposition not to clean readily. Turpentine in Mucilage Gum Acacia in from v to x gtt 3 or 4 times day would be very useful, and is much used in these affections by my much respected and worthy preceptor. In the convalescent stage of Typhoid we should be particularly careful in diet, and should restrain our patient from too free indulgence of animal food and above all from high seasoned articles. Weak animal broths and farinaceous liquids will be sufficient for the first three or four days of convalescence

and as this period advances some of the milder vegetable tonics. At all times giving the strictest attention to the condition of the bowls and stomach. Indeed it would seem to be better to rather watch the patient and allow them to gradually eat their way to their accustomed and regular diet and habits.

Thus we have ended with our subject, and I have attempted in a plain and condensed manner to give you my idea of Typhoid fever. And if in after years theories and practice should change I for one will always be ready to listen to the sound arguments and reasoning upon this

grave topic which must
necessarily arise from our respec
to teachers of our old and time
honored University. I am
gentlemen with great respect

A. Comegys
Kent Co
— Md —

AN

Inaugural Dissertation

ON

[illegible]

SUBMITTED TO THE EXAMINATION

of the

Provost, Regents and Faculty

of

PHYSIC,

of the

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

Doctor of Medicine,

by

[illegible]

of

[illegible]

Session [illegible]

Absorption of Nutriment

The body in health is as a pair of scales equally balanced, one side representing the tearing down the other the building up, or recuperative power of the System; if too much weight be thrown either to one side or the other there necessarily follows derangement of the whole, & thus constituting, what we recognize as disease. To keep this dreaded monster at bay nutrition is the active weapon one which is alike demanded by the Vegetable & Animal Kingdom

both of which have particular Organs
Whose office it is to prepare & conduct
to every part of the living frame Matter
to carry on this phenomenon
So know whatever was created needs
To be sustained and fed: of Elements
The grosser feeds the purer. Earth the Sea
Earth & Sea feed air, the air those fires
Ethereal, and as lowest first the Moon;
Whence in her visage round, those spots unpurged
Vapours, not yet into her substance turn'd
Nor doth the Moon no Nourishment exhale
From her moist Continent, to higher orbs.
The Sun, that light imparts to all, receives
From all his alimental recompense
In humid exhalation, and at even
Sups with the Ocean

In plants the roots, for the most part,
perform the Elimination of Nutriment—
they Extend with the surrounding soil
numerous branches these terminate
in rootlets, every one of which No matter
how small and insignificant, is
covered by innumerable microscopic
hairs which absorb moisture & other
Elements necessary to sustain the life
of the Vegetable, & then convey it to the
general Circulation by which it
is carried to every portion of the out-
-spreading branches. Plants are
also provided with Excretory Organs
which are chiefly represented by the
flowers fruit & leaves, whose duty it
is, to throw off all excrementitious

matter, thus maintaining a healthy action & the plant is enabled to bloom & bring forth its fruit, which is destined to play its part in the nourishment of man.

In animals the Alimentary Canal is analagous in its functions to the roots of the tree, & the various excretory organs to the flowers fruit and leaves

Cuvier is said to have been able to describe the character structure & habits of any animal by examination of a single bone. He could have recognized the purpose for which this bone was used by the possessor, if it either were intended

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to assist in rapid locomotion & to act as a weapon by which prey was secured & killed - or only to assist in the slow gait & peaceful pursuits of a herbivorous feeder; & thus did he know on what the animal subsisted & from that fact drew all his conclusions.

Nature has endowed all her creatures with every faculty by which to obtain their food. If we examine the skeleton of a bird of prey (which must necessarily have the power of long rapid flight) it will appear on first investigation, heavy, unwieldy & as an impediment to rapid movement

but if the search be extended further there will be found in each bone, of large size, a "pneumatic canal" containing rarified air & so the apparent obstacle to flight becomes one of its chief instruments & thus enabling the bird to pursue & secure its food with ease.

The skull of the fish is so formed as best to overcome the resistance offered by the water & to protect the brain from the pressure resulting from rapid motion.

And so it is throughout all creation of Animals, the body is formed in accordance with the manner in which it

lives & the Character of the food on which it subsists.

In the lower order of animals the phenomenon of Nutrition is comparatively simple, as their food is not of so great a variety as in the higher species & therefore a complicated Alimentary Canal is not demanded, But herbivorous feeders require a more complex digestive apparatus than Carnivora as the nutritive matter of the former food generally exists in a solid state & in very small proportion to the amount of Material taken into the Stomach; for the extraction of this matter it is necessary

that it should be finely ground which action is performed (in the common fowl for instance) by the triturating stomach, an organ lined with a hard, rough & bony character of Epithelium. This aided by the sand & gravel instinctively swallowed by the bird, so grinds & triturates the food as to reduce it to a condition to be acted on by the various fluids present in the alimentary canal & by this combined action of Mechanical & Chemical forces the nutritive portion is extracted & reduced to a form by which the absorbents can imbibe & transmit

it to the circulation.

Three varieties of food are required by Man to maintain a healthy Nutrition "viz" Albuminoid, Starch & Fat all of which are not present in any one article of food (excepting Eggs & Milk); & if any one of these materials be absent from the food for any length of time, death will ensue with every symptom of in-anition.

To extract & prepare the above named elements for absorption, & thus to sustain life, a complicated Alimentary Canal, secreting various fluids is di-

ferent portions, is necessary.
The action of these fluids on the
food is digestion or the prepara-
tion of nutritious matter for ab-
sorption.

The first process of this phe-
nomenon occurs in the mouth
where the food is masticated &
moistened by the combined action of
the teeth & saliva which renders
it in a consistency suitable for
deglutition to be performed with
ease, which brings it into contact
with the Gastric juice a fluid
secreted in the Stomach by the
"gastric follicles" in great abundance
during the stimulus of recently

ingested food; it is a clear colorless & acid secretion having the power of converting Albuminoid substances into what has been called Albuminose a matter now ready to be taken up by the absorbents. But the above named fluid has no digestive action on the other materials of the food, Starch being only hydrated & Oil only melted by the heat & moisture of the first portion of the digestive apparatus.

That part not digested now passes to the next division of the Canal, known as the Small intestines & which is subdivided into Duodenum

Jejunum & the Ileum, here the Starchy matter is prepared for absorption, but the exact nature of of this action is not known, as there are present in this portion of the Alimentary Canal three fluids the Bile, the Pancreatic & the Intestinal juices! the first of these may be at once disregarded as it exerts no influence whatever in the digestion of Starch; the Pancreatic juice has the power of reducing starchy matters into Sugar, but it is not known that this fluid is always here present.

The intestinal juice is the product of two sets of organs, the follicles of Lieberkuhn

& the glands of Brunner, they are situated in, or beneath, the mucous-membrane: are very numerous & have an excretory duct, by which they throw out during digestion a colorless & distinctly alkaline fluid which has the power of rapidly converting starchy substances into sugar. To the intestinal juice therefor must be mainly attributed the property of preparing the starchy ingredients of the food for absorption.

Two of the articles, of the food necessary to nutrition, are now ready to be taken in to the circulation, but there still remains

one more substance which plays a most important part in nutrition "viz" the fat which has been said above, to have passed through no chemical change when acted on by the gastric, or intestinal juices, but to have only been reduced to fluidity by the warmth & moisture of the first portion of the alimentary canal. This fatty emulsion after after passing the pancreatic duct, loses its characteristic appearance & is converted into a white opaque emulsion which is seen to adhere to the surface of the "villi" evidently being absorbed: but this change does not take place until after

passing the pancreatic duct- a fact established by Bernard in experimenting on rabbits in which this duct is some distance below that of the biliary. He found that after the animal had been fed on some food containing fat & this ingredient had passed the pancreatic duct, that it was in a condition to be absorbed.

Thus are fatty matters prepared for absorption by the action of a juice, the product of the pancreas, which is a clear colorless distinctly alkaline & some what viscid secretion.

(And thus it

is that the nutritive portion of the food is extracted reduced to an endosmotic substance a condition necessary before it can enter the absorbents - but it is not yet in a condition to sustain life, it must first go through several chemical changes before it is endowed with life giving properties, which changes take place during its passage to the arterial circulation.

Absorption is then the primary step & it might be said to indirectly confer life. For instance the seed which has laid dormant in the catacombs of Egypt for

hundred of years, in being planted in suitable soil immediately imbibes moisture & nutriment. This calls into activity the life, that in all appearances was lost - & the plant grows & becomes the type of its predecessors that flourished & blossomed a hundred years before.
Also the human ovum before it can produce a living embryo, must come in contact - & absorb the spermatozoa of the male by which it is endowed with life & is enabled to develop itself into a perfect foetus. And in the theory "omne vivum ex ovo" absorption is the first process that endows a degree of vitality, which

in its turn increases & multiplies,
until at length Myriads of lives
is produced, & with it many Myr
iads unfathomed by human
eyes.

The absorption of Nutriment in
Man is accomplished by the action
of several sets of organs, the first of
these are situated in the small in
testines - where besides the glands
of Brunner & follicles of Lieberkuhn
there are the glandulae solitariae
& glandulae Agminatae or Peyers
patches. The first mentioned of
these, are minute glands, situated
partly in & partly beneath the
mucous membrane - are about 1/35 of

an inch in diameter. Containing a soft pulpy Mass formed by minute cellular bodies in which penetrate Capillary blood-vessels circulating freely with each other returning by loops upon themselves.

The glandular Agminated quasi resemble the above described glands in structure & position - but are found more numerous at the lower extremity of the intestine. Both sets of these organs resemble the Mesenteric glands in structure & are probably to be regarded as the first row of these glands in the intestine

Another set of

organs of absorption situated in the small intestines are the Villi which are particularly numerous in the Duodenum & Jejunum. They are club or pear shaped - about 1/35 of an inch in length; closely invested by columnar epithelium which covers an intricate net work of blood vessels these anastomosis freely with each other & unite at the base of the villus forming the commencement of one of the radicles of the Portal vein

The villi contain, also in the centre a thin transparent vessel, the commencement of a lacteal, but the precise manner in which it

originates is not known - in all appearances it begins at the apex of the villus in a blind extremity a plexus, & ending downwards, sometimes in a straight & sometimes in a wavy line to the base, where it it unites with a small branch of the mesenteric.

The villi number about four million, thus greatly increasing the extent of mucous membrane over which the digested fluid passes; & the peristaltic motion of the intestine agitating these organs facilitates them in performing their functions

The lacteals are only

a part or commencement of the absorbents, or the lymphatics which are a set of canals found in nearly every part of the body, & have received their name from the character of fluid which circulates in them In their course, these canal pass through glandular bodies from the size of a millet-seed to that of an almond, these are known as the lymphatic glands. They contain a pulpy substance in which penetrates blood vessels, thus giving the character of the intestinal glands As the lymphatic canal enter the above described glands, they are divided & broken into numerous

ramifications, the vasa afferentia
& in their exit the vasa efferentia;
but the exact arrangement of these
vessels in the interior of the gland
is not understood

There are in the in-
terior of the lymphatic canals,
valves formed by a process of fibrous
membrane which shoots from the
side of the vessel & thus (as in the
arteries) prevents a regurgitation
of the circulating fluid, also giving
the characteristic beady appearance
which they present during digestion

In the
abdominal cavity the lymphatics
all converge to one common trunk

the Receptaculum Chyli situated
second & third lumbar vertebra, it
is about the size of a goose quill
at its commencement, decreasing
in calibre
as it extends upward through the
aortic opening of the diaphragm &
finally terminated in the left sub-
clavian vein, into which it pours
its contents.

For sometime the lacteals
were thought to be the only organs
of absaption, but Panizza proved
this to be an erroneous idea by his
experiments on the abdominal cir
culation. From a horse he drew
out about ten inches of intestine,
confined both ends by ligature

as well as, the mesenteric vein, which supplied the part, in vein he made an opening so as to procure the blood for examination; hydrocyanic acid was then introduced into the intestine vin a few moments its presence was detected in the blood which flowed from the vein - thus establishing the fact that veins are intimately connected with the process of absorption

We have thus seen that absorption is not performed by any one set of organs but that there are various vessels by which nutriment reaches

the general circulation.

The manner in which these organs imbibe & conduct their fluids to the respective reservoirs must be accounted for

In the villi, it was said, are situated the commencement of the lacteals to which organs has been attributed the property of absorbing fatty matters: but a difficulty arose in the explanation of this process from the fact that fat is an non endosmotic substance as can be easly shown by placing on one side of animal tissue, in an endosmometer an oily emulsion

& on the other pure water. The water immediately penetrates the tissue but the oil fails to do so. Not true though when the emulsion is distinctly alkaline in which condition it is endosmotic, & as digestion has made fat alkaline it can easily penetrate the villi & be absorbed by the blood vessels & lacteals

During digestion, after a meal containing fat, the lacteals are seen to be turgid with a white opaque fluid which is the chyle being conveyed to the recplaculum chyli. The lymphatic glands also contain some of the chyle

Thus does the alkaline fatty emulsion by an endosmotic action into the villi through which it passes to the lacteals, these convey it to the receptaculum chyli, thence through the thoracic duct (the continuation of the receptaculum chyli) by which it is carried to the left subclavian vein into which it is emptied.

The chyle has not been affected by any chemical change as in an emulsion contained by the small intestines neither is there any change of this character after it has entered the lacteals + in this same condition is it poured into the right heart

a fact proved by oil globules being seen floating in the emulsion during its whole course from the intestine to the heart, but when the blood has once passed through the lungs an entire change occurs & the oil globules are no longer present

One of the most important facts established by modern researches on absorption is that the different nutritive fluids enter the general circulation by different routes. The fatty matters enter through the lacteals, but the saccharine & albuminous are absorbed & pass into the Portal vein

The Portal vein is found in the abdominal cavity: its office is to return the blood from the viscera of digestion, conveying it by the Vena Portae to the liver, through which organ it passes by hepatic vein to inferior vena cava & thence to the heart

The stomach is supplied with capillary blood vessels by the gastric vein, which gives off numerous branches, these divide & thus produce a multiplicity of minute veins, which form an intricate net work, enveloping this organ; these veins after freely inosculating unite & form a common

trunk which connects with the gastric vein one of the branches of the Portal vein.

The intestines also receive a branch from the portal vein known as the Mesenteric, which like the gastric divides into numerous branches these supply every portion of the intestine

It was said in the description of the intestinal glands that blood-vessels freely inosculated through & around them, returning in loops upon themselves, uniting, & thus forming a trunk which no doubt is the commencement of a branch of the superior mes-

-enteric vein

If the contents of the blood-vessels just described be examined after eating there will be found Albuminoid & Saccharine matters which have been absorbed & are now on their route to the general circulation.

And in this way the nutritive matter extracted from the food by digestion, prepared, & at last by an endosmotic action enters the organs of absorption which by different routes are connected with the right heart; into which organ the materials, intended for nourishing the body, is poured, it is

then, after having passed through the lungs, emptied into the left heart which acts as a force pump & at each pulsation throws out the vital liquid to every portion of the body; building up as the old materials that have performed their work are cast off, by the various organs provided for that purpose & thus maintaining the balance of the scales & healthy nutrition goes on.

But this is but a step in the grand phenomenon of nutrition Not only does the blood nourish, but each organ, each little hair; Nothing is so small & insignificant - that it has not

its most important part to perform
in the great work of keeping up vitality
Paget has truly said - each organ
of the body acts as an excretory
duct to the other, extracting from
the blood that which is intended
for its support & which if not extracted
would act to the other organs as a
poison, & thus derange its functions
which would soon be followed by
a breaking down of the whole

The organs
of the Human frame first endowed
with the mystery of life, are mutually
dependent & constitute a harmonious
whole glowing & throbbing with
the beauties of animation - then

by absorption of food, through their many channels, are enabled to perform their various functions day by day & year by year, till gradually exhausted by continual decay & the labor of perpetual repair, they yield to the general laws of nature - & man sinks into his grave, and -

Strange that a book of a thousand strings
Would stay in tune so long.

AN

Inaugural Dissertation

ON

Opium

SUBMITTED TO THE EXAMINATION

of the

Provost, Regents and Faculty

of

PHYSIC,

of the

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

Doctor of Medicine,

by

William T. Bohanan

of

St. Mary Co. Md.

Session 1866

Opium

This is the concrete juice of the unripe capsule Papaver Somniferum or the poppy, an annual plant of from three to six feet growing in all parts of Asia and cultivated both in this country and Europe, though it is principally derived from Asia Minor Hindostan and Egypt. That found in our market is generally obtained from Turkey and called Smyrna Opium, it is that from which the ordinary description of opium

is drawn. it is in irregular masses weighing from one to two pound: When first imported it is of a reddish brown colour, but it soon becomes hard and blackish by keeping: it yield generally from seven to ten per cent. of Morphia.

There are however several other kind found such as the Egyptian Indian Persian European differing some little in colour and appearance, and not yielding as much Morphia.

General properties of Opium When good it is of a reddish brown or deep fawn colour in mass and when dry yields a yellowish

brown powder. When drawn over paper it leaves an interrupted trace of a light brown colour. Its odour is strong narcotic and peculiar; its taste bitter somewhat acrid, and nauseous When long chewed it irritates the mouth, and may even vesicate It is inflammable. Water alcohol and diluted acids extract its virtues.

Opium contains besides Gummy and extractive matter, resin fixed oil &c common to vegetable products. Morphia narcotina codeia thebaina papaverina and opianic having alkaline

properties, narcein meconin and porphyroxin which are neuter and an acid called meconic acid.

The test of opium. An infusion of opium reddens litmus paper, becomes turbid with a solution of amonia, it is reddened by nitric acid, and is precipitated by infusion of Galls.

But the only satisfactory test of its value is the per cent. of morphia it contains. Good opium should yield from nine to eleven treated as directed by U. S. Pharmacopia.

Effects of Opium upon animals.

It seems that opium and its preparations differ very decidedly in its effect upon animals from that it exerts upon man.

In the lower animals the function of mobility is especially affected. The invertebrate suffer debility and paralysis of the contractile tissue. The vertebrate below the ranks of man are chiefly effected with convulsions.

Rabits feed upon the poppy and it seems from several experiments by Dr. Lafargue

that they could take three or four Grains of the acetate of Morphia without any poisonous effect. Several experiments upon dogs show that they can take from one to two grains with impunity.

Though all of these experiments the medicine was introduced into the stomach. When opium or any of its preparation are injected into a vein or under the cuticul so that it may more directly be absorbed. a more decisive

death is produced. Barbier injected from drachms of aqueous extract of opium into the trachea of a horse, which proved fatal in six hours post mortem revealed a quantity of reddish serum in the spinal canal.

I shall now speak of its effect upon man. I suppose there is scarcely any person who has not felt the soothing effect of this drug. At first it increases the pulse and general warmth of the skin. Which is followed by its sedative

effect when the person falls
in a gentle sleep. If sleep
does not take place there
is a repose of the brain un-
disturbed by pain or
external annoyance. And
a crowd of dreams and
pleasant thoughts sweep
across the field of imagi-
nation. This is when
a small dose from a half
to a grain is taken.
Should three or four be
administered a more
decided effect is produced.
The stage of excitement is
longer and there is often

a fulness about the head
throbbing noises in the ears
face and eyes are injected.
the pupil more or less
contracted. Flashes of light
often appear before the
mind. and sometimes
delirium mouth and
fauces dry and frequently
there is nausea and vom
-iting. Then follows the
depressive stage. the pulse
is slow and irregular the
senses lose there acuteness
the countenance assumes
a stupid expression, the
speech is thick and hesitating

the muscles of the limbs are affected with Spasmodic motion. Should the patient attempt to walk he feels giddy and often staggers like a drunken man. A propensity for sleep follows these symptoms the breathing becomes laborious, the body generally becomes bedewed with a cold sweat particular in the lower extremities the sleep is not as pleasant as when a small quantity only has been taken, the person is often aroused

by turbulent dreams but immediately sinks into his previous condition.

When larger doses than these are taken we have the poisonous effect of this drug. The exciting stage is generally absent. Giddiness insensibility and immobility respiration scarcely precepti= =ble. The pulse feeble and slow eyes shut pupils contracted the expression of the countenance is that of perfect repose. But as the effect increases the lithargic state becomes more profound. deglutition

is suspended, pupils become insensible to the application of light.

There are sometimes occasional return of consciousness but the patient goes back into a comatose condition, and soon dies. The quantity of opium to produce this condition is very different in different persons. Some can take an enormous quantity while others cannot take even the smallest. I saw a child in a state of narcotism from only one sixth of a grain of Dovers powders

while there are cases on record where a child from six to twelve months have taken from four to twelve grains without any deleterious effect. And should we look to the Asiatic countries where heat of the climate restricts the use of alcohol we find people eating enormous quantities, and dare I say that it is rewarding to a great extent in this. It seems strange but man must and will use some stimulant to make him forget for the present the

cures and troubles of this life. In truth does the divine say, "Man of woman born is a few days and full of trouble" and to forget this trouble one will resort to opium another to alcohol while a third may take to opium. or some of its preperations.

If we should believe or credit the writings of De Quincey we should believe that opium was the least daingerous of all. He states the difference between the influence of opium

and alcoholic stimulents
these. The intoxication produced
by alcohol is always ascend=
ing to a certain point which
is soon reached and spea
=dily declines. While that from
opium when reached is
stationary for eight or ten
hours. The former agent
disorders the mental fac=
=ulties while it stimulates
them. The latter introduces
among them the most
exquisite order legislation
and harmony. He proceeds
and says the mischief
of these stimulents are also

different alcoholic drinks
tend to bloat and swell
the body, giving to the flesh
a dull and sodden look
and producing rather a
red eruption upon the face.
While longe indulgence
in opiates on the contrary
renders the frame more
attenuated gives the flesh
a dry and shrunken look
to the complexion a dus-
ky hue approaching yellow-
-ness. The former reduces the
mind to a state of childish
and pitiful imbecility.
The later renders it sluggish

and horrid chaining it
down in sloth but without
destroying its consciousness of
power. When we refer to the
writings of others we find
a very different statement.
We find them up in little
in a frightful state of de-
rangement of the nervous sys-
tem and of the digestive the
oppressed breathing and hazy
bleared eyes of the devotees of
this vice. The flesh withers
and the bones are racked
with pain. The bent figure
shuffling gait drooping
eyebrows, dull eyes surrounded

by a livid circle give an
appearance of premature decrep-
=itudes and ultimately the
stomach is the seat of an
incessant gnawing pain
The food is vomited diarhea
comes on, the urine is turbid
Brights disease is very common
and it seems almost im-
=possible for a person to give
up the habit. when once
formed. The miserable creature
is a prey to perpetual torture
and feels in his stomach
an urgent desire for a fresh
supply of the stimulus.
Which has been compeared

to the gnawing of a ravenous animals and against such demands the patient can do but little more than to refrain from increasing the dose. The quantity that has been consumed by some is almost rediculous. De. Quincy acknowl=edged having taken 320 grs daily. While some have six and seven hundread and strange to say some of these have lived to an old age.

Modus Operandi.

It was formerly believed that opium by remaining in contact with the internal

face of the stomach produced such a change in the nerves there distributed as to blunt the perceptive faculty of the brain. But recent experiments have overturned that theory and is now admitted that although when applied directly to the nervous extremities may produce a local loss of sensibility. Yet that in general symtoms are intirely due to the absorbtion of its narcotic principles. In proof of this fact we find that sometime elaps between the application of an opiate

to the denuded before the narcotic
symtoms appear, and we likewise
find that narcotism is more
speadely produced by the in=
jection of an opiate into a
vein than any other way
of administering.
There is in reality no greater
barrier between an opiate
in the stomach and the
blood vessels, than there
is between it and branches
of the nerves, in either case
a membrane intervenes
which must be traverst
before the opiate can reach
either of them, and clearly

the passage through this membrane is absorbtion so that it takes place whither medicine stopes at the nerves or mingles with the blood

But one of the most streak ing proofs is that the secretion of a person under the influence of an opiate possesses all the qualities of the drug.

Various disputes have been held as to whither opium is a stimulant or a sed- -ative. In small doses it is certainly a stimulent at first but secondly a sedative in larger

does the sedative effect follows so soon that the unpleasant symptoms are not perceptable.

Hypodermic Application

Opium has been used from the earliest period of Grecian history, as a medicine to allay pain and is one of the most important medicine we possess in our catalogue. Indeed some Physicians have declared emphatically that to remove it they would cease to administer there art to suffering humanity. There is scarcely a disease that opium or some of

its preparations are not indi=
cated. It may be used as a
stimulent in small doses
of from a quater to a half
of a grain. and in doses in=
sufficient to produce any
material effect upon the brain
opium acts as a nervous
stimulent. If the dose still
be increased we have the
sedative effect of this drug
It is in these doses that opium
is so useful to procure sleep.
The soporific action of is the
direct influence of the nar=
=cotic upon the brain. but
sometimes it may produce

sleep by allaying the nervous disorder which has produced this wakefulness. The loss of sleep is in many instances a most serious complication of disease aggravating and often rendering fatal many cases which might but for it, end in recovery. Whenever it is not attended with high vascular excitement or inflammation of the brain it may advantageously treated with opium. In all morbid discharges it has been used with great success. The precise principal on which opium

produces This effect is not
certainly known. But it
may be conjecturally ascribed
to its direct sedatial influence
over the capillaries. Combined
with ipecac or tarter emetic
may act as a diaphoretic
and constitutes one of the most
important in the list.

Contra indications.

High state of febrile excite
ment with a full and strong
pulse, by an acute inflam-
=mation of the brain or
its minings. a determination
of blood to the head threat-
ning apoplexy. in early stage

of inflammation without sufficient preliminary reduction, in excessive sweating constipation of the bowels a defective biliary secretion and also in cutaneous eruptions, And of inflammation of mucous membranes particularly the bronchial. or indeed it may safely to be contraindicated in any inflammation of any secreting organ.

Opium when taken in large doses may prove poisonous, and as there are no direct antidote

There remains no other
procedure when a poisonous
dose has been taken than
to remove it from the
stomach, and then coun-
=teract constitutional effects
by stimulents or anticdotes
applied to the nervous
system. The best way of
evacuating the stomach
is with mild emetic. Such
as ipricacuanha or mustard
with large draughts of warm
water. Should these fail
Sulphate of zinc a copper
should be resorted to.
When it has been taken in

fluid state. the stomach pump is perhaps the best means we can employ. After the stomach has been duly evacuated the constitutional symtoms remain to be combated. The remedies for this are all nervous stimulents and perhaps the best of these is coffee as opium in its effect contracts the pupil it has been proposed and with good success to use the mydriatics in cases of poison by opium. They should be given until the contracted pupil begins to dilate.

But it sometimes happens that none of these remedies will do any good. In this desperate condition we should resort to electricity which may snatch the patient from the jaws of death...

AN

Inaugural Dissertation

ON

Intermittent & Remittent Fever

SUBMITTED TO THE EXAMINATION

of the

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of

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of the

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FOR THE DEGREE OF

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by

William Mc Wilson

of

Baltimore Md

Session 1866

Intermulent
fever

A succession of periodical par
oxysms of fever. each paroxy-
-sm commencing with chills
and terminating in a free per
spiration with protracted in-
-tervals, of perfect freedom fro-
-m fever. during the remission
there is good health; but at the
end of a definite interval the
phenomena are repeated, and
this happens again, and again.
until a cure is effected.
There are three stages of the dis-
ease the cold stage, or chill
which is the first. the se-
ond which is the fever or hot
stage, the third or sweating

stage, which is sometimes the most
critical. There is three varieties
of this disease, called Quotidian,
Tertian, and Quartan. The Quo
tidian, is when the paroxysms
occur every day, or twenty four
hours, from one to the other par
oxysm, the Tertian is where the
paroxysms occur every other day,
or forty eight hours from one
paroxysm to the other, the Quarta
-an is where the paroxysms
is every third day, or seventy two
hours from one paroxysm to
an other. The time between the
the commencement of one paroxy —
ysm and the beginning of the

next, is termed the interval,
that between the termination
of one paroxysm and the com
mencement of the next. The
intermission, the Tertian is the
most common in this country
the paroxysms occuring, every other
day - or every twenty four hours.
The predisposing - cause of inter
mittent fever, are fatigue, fran
- ting, exposure, exhaustion - ment
al depression, improper or in-
sufficient food, intemperance
and exposure to night air, and
the circumstance of ones hav
- ing had it. It is worth rem
ember that malarious dist

-ds are most dangerous at nig-
-ht, and that this poison lies low
er, lows the ground, it is most
common in the warm clim-
tes, the circumstances which appear
to be essential to the production
of miasmata are heat, moisture,
and vegetable decomposition,
the peculiar morbid effects ass-
cribed to this cause, and by which
alone its existance can be recog-
nized, seldom originate at a tem-
perature under sixty degrees of heat,
even though vegitable decompo
- sition may be going on, at a
temperature of eighty degrees they
are often very prevalent, and are

generally checked by the occurre-
nce of frost. A certain continu-
ance of heat is not less necessary
than a certain degree of it,
Hence miasmatic diseases sel-
dom prevail beyond the fifty
sixth degree of latitude; becau-
se, though many days in sum-
mer may be very hot, the warm
season is short. the nearer the
we approach to the equator, the
the more violent is the disease
as a general thing, implying a
greater intensity of the cause,
in our latitude where there
is a regular change of seasons.
they do not make their appearance

as a general rule, until the
middle, and oftener the later
part of the summer, and some
times not until late in the au-
tumn, moisture is necessary to the
evolution of miasmata, but much
of it often serves as a preventa
-tive, for if there is much vegetable
growth, and it remains immersed
in water, it is not so liable to
decompose, as if it was immer
-sed for a time, and thereby
posed to the action of the sun,
as in high and low tides on the
marshes of our own shores, the high
tides bringing up animal matter,
such as, fish, frogs, and then rea

leaving them to the action of the sun, during low tide; which causes the vegitable as well as animal matter, to decompose, and give off its gaseous miasma. in tropical latitudes. it is after the cessation of the rains, that the ravages of the milarious fevers commence, hence miasmatic diseases are apt to follow the submerging of meadows in order to increase their fertility; the. the forming of mill ponds, and the damming of streams, for the purpose of canals. neighbourhoods. before remarkably exempt from disease, have thus become

very unhealthy, and have not ceased to be so until the vegetable matter, thus deprived of its life, has undergone complete decomposition. At the points where the salt and fresh waters meet there is often more stagnation than either above or below, because the flux and reflux of the tides are less than in the latter position, and the steady downward current of the former, is wanting. The morning and evening air is peculiarly injurious, so much so that persons who go out of their houses only during the day after the fogs have dispersed in the morning,

and before the dews descend,
in the evening: are apt to escape
altogether. the miasmatic effluvium appears to rise by the heat
of the sun, and to be so disperse as to become innocious,
but to require a dangerous
concentration by its union
with the moisture which forms the morning, and evening
dews, exposure in the middle of the night, is equally dangerous, and especially during
sleep, when the power of resisting noxious agents is diminished, there is danger also from
sleeping in tents, in sickly
regions

Diseases usually the result of miasmata. sometimes occur epidemically. with all the characters of the cases that are obviously of local origin. whither in such instances the cause may be the same as that of the identical endemick affections, it is impossible to determine; for the circumstances in relation to temperature, atmospheric moisture, and the character of vegitation. in the deffrent seasons, during which the epidemic has prvailed, have been so variable, that no tolerable certain inference can be deduced from them.

From the fact, however, that the dis-
ease usually appear at the same
seasons as well as for their identity
of nature, there seems to be good
reason for ascribing them to the
same malarious influence, but
the peculiar condition of things,
which cause the development
of this influence, over wide reg-
ions where it had been before but it
is known, remains quite
concealed. The most striking and
characteristic morbid effects of mi-
asmata are Intermittent and
Remittent, Bilious fevers; but they
are believed also to be capable of
producing diarrhoea, cholera, colic,

dysasentary · various hepatic, and gastric, derange ments, and mur algia, inhabitants of miasmatic districks are apt even when labour ing under no well-marked and definite complaint. to exhibit signs of feeble health. in their spare habit of body. sallowness of com plexion, uncertain apettite, and and irregular bowels, and persons are not unfrequently found with enl. larged Spleen, or liver, swolen ab domen, and even dropsical symt ptoms; but how far these are the direct effects of miasmata and how far of the febrile diseases which are the acknoledged results of this

morbid agent. it would not alwa
ays be possible to determine,
The disease is a succession of period
ical paroxysms of fever. each
commencing with chill and
terminating in free perspiration
with protracted intervals of per-
fect freedom from fever. there
are three stages, first is the cold
stage; second, is the hot stage. third
is the sweating stage. the pre
monitary symptoms are, debil
ity and distress about epigastr
ium. weak, languid, restless,
and inactive, sighes, yawns, pain
in head and back and chillyness.
Symptoms of the first stage, are

chilly-ness pale and contracted lips, which with ends of finger are purple, all the symptoms of a chill pulse fibre, urine, scanty and high coloured; bowels constipated, tongue dry and furid; it generally lasts from half hour to three or four hours, when the second stage sets in chills alternates with flushing of head, face, red and turged, some times with full and burning sensation in the eyes, generally surface dry and hot, (some times the thermometer will indicate from one hundred and ten to twelve when applyed to the skin) with throbing of temples, puls full strong

and rapid. breathing deep but
oppressed. urine scanty but not.
high coloured, tongue covered with
white fur, then it passes in to the
third or sweating stage, perspiration
on face and breast, which becomes
universal and copious, tongue na-
ist. urine more plenty and turbid
pulse become more natural the
head-ache, heat of skin and thirst
abate, bowels and the kidneys
act freely, the urine containing
an increased quantity of urea and
and all the distressing symptoms
are relieved. so that the patient.
if the case be recent. often puts
on perfect health, consecutively

however and especially in tropical climates, this stage ends in great exhaustion; so that the free use of alcohol is required to prevent fatal collapse. Disease of the spleen is a very frequent consequence or result of intermittent fevers. This gland is found enlarged, sometimes to a great extent and occasionally indurated; in which condition it is popularly spoken of as ague cake. Some authors say that the spleen may be found invariably to enlarge during the colder stages; owing to the blood being driven from the surface of the body to the viscera. [illegible]

especially to this organ. the enlarge
ment subsides during the in
termission, but not completely,
so that each attack the size of the
gland is a little larger than
it was previously, in like
manner, morbid changes occur
in the liver, giving rise to
depraved secretions and distur
bances of all the digestive orga
ns, and in a few cases to per
manent enlargement and
induration, in protracted cases
complications are not unlikely
to arise, and the brain or the
lungs, or the stomach, and bow
els, may become the seat of inflama-
tory action

when the patient is obliged to remain in a milarious district. the difficulty of curing ague will be very much increased. the diet should be good and nourishing, with a regulated supply of stimulants. from the first, unless there is evidente derangement of the alvine secretions, and then we must comence with beef-tea, arrowroot tapioca, sago and rice water in the colde stage external warmth such as blankets and bottles of warm water, deluant drinks, as weak tea, gruel, and if fell, a little wine, may be added to them, when great pain give

Opium in doses of one grain da-
ses, stimulants such as carbonat
of ammonia, in doses of five to
ten grains. in cases of a very sev
ere chill give from thirty to forty
drops of the tincture Opium with
half drachm of Sulphuric ether.
hot air baths are allso good this
may be prepaired by means of
a long wickerwork basket. cl
osed at one end by a board.
this laid over the patient and
covered over with blankets. a
tin tube is then passed thro
ugh a hole in the center of the
board. the other end of the tube
expanded in to funnel shape

looking downwards, and having
a spirit lamp placed beneath it; and
thus the air under the wickerwork
soon becomes heated during the
hot stage, an opposite plan of treat
ment should be pursued cooling
drinks being then required while
the surface of the body is sponged
with tepid or cold water when
internal inflamation, bleed
leting may be assorted to, when
the sweating stag commences and
we wish to promote it give warm
drink, when it has lasted long
enough cautiously dry with a soft
towel, chang the linen and get
the patient as comfortable as
possible,

purgatives must allways be given
at the outset, such as calomel,
in doses of from three to five grains,
in combenation with from eight
to ten grains of rheubarb, best
time to comence at bed time,
then to be followed in the mo
rning by some apperient. sa
line draught, the bowels being
thoroughly evacuated, then be
gin with Sulphate of Quine,
ine in doses of three to five
grains, every four to six hours,
combined with calomel for
the first five or six doses, or
Cinchona bark. you may give
Arsenic such as fowlers solution

in doses of five drops to begin with, it is best to give it on a full stomach, and may be increased to a full dose of ten drops, Salicine, and black Spiders-wort has been given, in doses of five grains in a pill, when the patient is convalescent, give tonicks, such as carbonate of Iron, one ℥i Cinchona ℥ Pimento ℥ the dose ℥ two to three times a day.

Remittent fever the cause of remittent fever are the same as those of intermittent it is caused by the miasmatick influence, the symptoms also bear the

some resemblance to those of
intermittent fever, with nota
ble difference however that in
the intervals, there is no cess
ation of the fever but simply
an abatement, or diminution
the period of remission, varies
from six to twelve hours at
the end of which time the
feverish excitement increases,
the exacerbation being often
preceded by chillyness, and
rigors. There is three forms,
simple, Inflamatory, and
malegnant, first simple form
the premonitory symptoms are
for some days, restlessness, langour,

bitter taste, nausea; aversion to food, uneasiness and fullness about the epigastrium, sometimes costiveness, and usualy more or less pain, and heaviness over the eyes, it is usually ushered in by a slight chill coldness, along back which after one or two hours, is followed by heat of whole surface, skin dry and constricted, face flushed and turgid, eyes red and suffused, pulse quick and frequent but rarely tense, great weakness and restlessness, pain, fullness weight and tender in head, pain in back, and legs, Epigastrium tender

upon pressure, even when there is no pain, there is more or less irritability of stomach, vomiting usually at third or fourth day. of a bitter greenish yellow or bright green matter, Tongue moist. red at sides, and coated with a whitish, light brown, or yellow fur, thirst costiveness. scanty and high coloured urine, and after a few dayes, skin of a yellow colour, metallic taste in mouth. In simple form the paroxysms last from four to ten hours and the remission from two to nine hours. the symptoms of the Inflamitory

Forms are a higher degree of
vascular excitement, during
hot stage exacerbation last
about twenty four hours, pulse
beats of one hundred and fifteen
to twenty, urine scanty. skin
dry and hot, in some places,
but cool in others, stupor, low
delirium, subsultus tendinum.
slipping down in bed, comid,
surface cold, these are very un-
favourable signs, and death
occurs in five or six days.

Treatment when the stomach
is foul and loaded, give an emetick.
such as ipecacuanha, one scruple
of the powder, or one ounce of the

wine, if the stomach is not loaded
give a cathartick, such as calomel,
from eight to ten grains or calomel,
combined with rhubarb, calomel
three grains. Rhubarb eight grains
followed by a saline cathartick, such
as Rochel salts, or magnesia if the
fever is very high you may take
blood from the arm, if the person
be a strong one, give cold drinks.
Ice may be given, When there is
gastrick disturbance combine opi
ium with calomel, give Quinine
during the intermission in does
of from two to five grains every
three to four hours it may cut
the disease short as it seems

to be the onley known
specific there is no specifick but
Luinine seemis to have some
specifick influence over this
disease, as well as Intermident
forms of the disease.

AN

Inaugural Dissertation

ON

Typhoid Fever

SUBMITTED TO THE EXAMINATION

of the

Provost, Regents and Faculty

of

PHYSIC,

of the

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

Doctor of Medicine,

by

J. B. Walbach Gardiner

of

Maryland

Session 1866

I believe the practice of medicine should be avoidable to reason, particularly in cases of fear, which in fact is somewhat analogous to all fevers and of which we have such numberless examples.

My object is to confine myself more particularly to hygiene, than to enlarge upon the symptoms of the disease itself, since I am inclined to the opinion that those who become convalescent have in truth just reason to thank their attending physician for allowing them to get well.

Experience will often cure diseases without medicine, but medicine will

seldom succeed unless a proper regimen is neglected. In typhoid cases more particularly I think the first place should be given to regimen. Every disease weakens the digestive powers. The diet ought therefore in all diseases to be light and easy of digestion. Abstinence alone will often cure a fever, but time the powers of Nature cure slowly and gradually failing and Nature calls for assistance; but she is not answered when antiphlogistics of a deleterious character are administered. She desires nourishing diet and generous stimulants and then her desires

are more practical in Europe, but to.
Medicines are no doubt useful in
their places and when administered
with prudence may do much good;
but when substituted for anything
else they certainly must do mischief.
Diet, as before remarked, is always
the first thing to be attended to in
the treatment of disease, and many
indications of cure are answered
by it alone. The Effects of good -
diet are not always so quick as
those of Medicine, but generally
more lasting, and this should
always be borne in mind. In -
Hydrocele we must use Sustinence
as Medicine, and often we are

compelled to administer it as such since the patient has frequently so great a repugnance to food of any kind that to keep body and soul together it is absolutely necessary to force it every two or three hours, but in small proportions. The diet ought not to be too uniform but as far as consistent with prudence agreeable to the desires of the patient. It is of the greatest importance that it should be taken at regular intervals since by irregularity the intestines become weak and irritated with wind instead of nutriment, and I am of the opinion that many

sudden deaths are occasioned by the irregularity of the diet. Since it exhausts the Spirits and renders dull all chances to recuperate. Nor is the attention of other things of less importance. The strange infatuation which has long induced people to shut up the sick from all communication with the External air, has done great mischief, and I have seen this exemplified on numerous occasions in the Confederate Army. The poor soldier who suffered many hardships from the inclemency of seasons, long marches, bad provisions, hunger, watching, unwholesome climate,

bad water &c often became the victim of this insidious disease, and when no longer able to perform duty was sent back unfortunately to some ill ventilated hospital there to pine away his existence— Whereas on the other hand those who remained in Camp were placed in tents two-by-two, and when the weather would permit, the lower borders of the tents were well - pinned up thereby giving the - patient the full benefit of free ventilation. It seems almost - useless to remark here the great difference in the mortality, for when we take into consideration

the great disadvantages attending
even the best conducted Hospitals
of which this country can boast,
the question will speak for itself.
However it may not be amiss to
say before proceeding further, that
Even those who were fortunate Enough
to enjoy the comforts of a home -
were less fortunate in their recovery
than their companions who remained
a little distant from their camps.
Questions will be asked as to com-
plications which may arise from
such an undue amount of pure
atmospheric air - vicissitudes of
weather &c, stating at the same
time that pneumonia, pleurities,

bronchitis &c may ~~[illegible]~~ arise and carry off the patient before there is a possibility to recuperate; but since a fever is only an effort of Nature to free herself from an offending cause, it is the business of the physician to observe with diligence which way Nature points, and to endeavor to assist her operations. If the Efforts of Nature were duly attended to and promoted it would seldom continue long, but when her attempts are either neglected or counteracted it is no wonder that the disease prove fatal. Now since the disease itself is caused partly by a viciated and

foul atmosphere, why should we
add fuel to the flame by Exposing
a patient to one of the principal
causes from which the disease
originated? From my very limited
Experience and were it consistent
with the practice of the day, I would
certainly prefer to treat Even a
Severe Case of Typhoid fever in
Small places where my patient
could inhale pure air, than where
he is confined to the walls of a
Hospital or in a Sick room.
Complications I think are more
apt to occur for those yet to
learn that a free circulation of
air, when a patient is properly cared

for, can prove Either injurious to
health or to one laboring under
disease. Sleep like diet ought
to be duly regulated, since the
benefits arising from sleep are
sufficiently obvious from the
effects it produces. It moderates
the quickness of the pulse which
usually increases at night and
diminishes both excretions and
secretions; it restores in a measure
the powers of the mind and body
and seems to aid in the digestion
of aliments. Nature points out
night as the proper season for
sleep, but she requires for her
benefits a refreshing sleep.

Unfortunately in Typhoid cases a slow and muttering delirium frequently, if not always, accompanies sleep, exhausts the mental faculties, weakens the muscular fibres, causes lethargies &c - therefore as far as consistent a medicine should be observed, that is, if it can be accomplished. To promote sleep although delirium be present I cannot but think that an opiate in the form of Dover's powder would prove exceedingly efficacious, since it is both an anodyne and diaphoretic, and exerts no doubt a partial influence on the diarrhoea, which ought always

to be borne in mind. Now since I have stated that food should be administered at regular intervals the question naturally arises whether it would be consistent with good practice to interrupt the patient during the night to administer nutriment? I am inclined to the opinion of my much honored Professor Dr. McSherry that it would even be absolutely necessary to administer nutriment at stated intervals whether we awake the patient or not. It should also be our object to give the patient as much rest as possible during the night and if the diarrhoea be-

troublesome some astringent in combination with opium should be administered in sufficient quantity to prevent a too frequent desire to Evacuate the bowels. The protracted duration of the disease Causes one to be more cautious, and although far from the opinion of checking the diarrhoea suddenly (if it can be checked) I believe - nevertheless it is necessary that it should be partially checked, for it being one of Natures modes of ridding herself of an offending Cause, to check this diarrhoea altogether would be certainly very Injurious.

Cleanliness is certainly agreeable to our Nature and frequent washing not only removes the filth and sordes which adhere to the skin but likewise promotes the perspiration and exhilerates the spirits. Although many consider it mal practice to use the sponge I have certainly seen the most beneficial results from a free and frequent use of both cold and tepid sponging. Reason of course must guide us in its application as well as the feelings and wishes of the patient. Cold applications to the head often prove exceedingly grateful. I recollect a few years ago it was

the practice of many Country to deny the internal and external use of ice, and even in my own case was this innocent remedy, for I regard it as such denied me. I deemed it then very cruel on the part of my Physician and now I am convinced it was so- for what can be more grateful to ~~parched~~ parched lips and a heated Surface than this cheap and convenient remedy.

I was about to overlook a duty which I am sorry to say is too often neglected, that I regard as of the utmost importance, and one which should not be entrusted

to the nurse viz the constant examination of the urine. Every day the condition of the bladder should be Examined since the patient in his stupor and indifference appears not to be sensible to the desire of passing water and the consequence is an over distention of the bladder which may terminate in disease of the Kidneys even after the patient has convalesced.

It was not my intention to Enlarge so extensively on Hygienic measures or to Express myself as I have, but I trust that those who have patience enough to peruse these pages will grant

me indulgence, and console them-
selves. I do, with the ancient and
true Saying, that only intelligent
people can verify, that brevity is
the Soul of wit.

This disease is characterized by the
slowness and insidiousness of the
attack, and is sometimes preceded
by prodromic Symptoms. There
is slight head-ache on rising in
the morning, irregular flushes of
heat, slight accelerations of pulse,
furred tongue, languor and weari-
ness with a disposition to diarhoea.
The Symptoms may continue
even weeks before the patient be
confined to his bed; then a chill

seems to invite a renewal or rather
an increased violence of the —
Symptoms accompanied with
pain in the back and limbs, in-
somnia epistaxis &c. The tongue
becomes red at the tip and edges
and by examination of the Coecal
region we find tenderness and
gurgling under pressure. There is
a characteristic irruption about
the Eighth day, rose colored spots,
which disappear upon pressure.
About the same time or later Su-
damina appear on the neck and
thorax, but as a diagnostic point
they are of little interest for frequent-
ly they are never seen. All the —

Symptoms are generally constant, but sometimes intermittent. To day a patient may be apparently well, tomorrow a corpse.

This disease belongs to the class of self-limited; the shortest duration, according to the experience of my former professor Dr. Austin Flint, is five days; averaged duration Eighteen days; longest duration twenty Eight days. As the disease is ordinarily presented to us it is not communicable or contagious, but under certain circumstances I believe it to be so. It seldom attacks persons over fifty and very rarely infants. The fatality

is greater in proportion to the age of the patient, and among those who have lately become residents. It generally occurs in the Autumn and prevails more in Strong healthy persons than in those who are sickly and emaciated. The Anatomical characters are somewhat remarkable— the most characteristic are thickening, softening and ulceration of the glands of Peyer, situated in the Ileum alone, and most numerous in the lower End of this intestine. This ulceration is due to a deposit of dark matter from the blood, and the tendency

of this matter is to soften, thereby causing the mucous coat of the intestine to give way and allow the contents of the intestine as well as this dark matter to be discharged into the abdominal cavity, exciting peritoneal inflammation from which the patient must inevitably perish, notwithstanding that adhesions do sometimes take place.

Opium may suicide a fever, says Dr Watson, you cannot cure it. Taking into consideration the diarrhoea we should be cautious not to aggravate it by any irritating or drastic cathartic. —

When it possible I would prefer in fevers to start all the Secretions at once and often to use the tonic & Stimulating treatment throughout, and treat Complications as they arise. In the premonitory Symptoms says Dr Wood an Emetic is highly useful; and Dr Chambers also - States that in this fever or any Continued fever an Emetic, Ipecac. being the best, will often cut short the disease or lessen its violence. So in a large proportion of Cases an Emetic during the first week of Typhoid fever is never out of place. But when there is Epigastric tenderness and tendency to -

cerebral symptoms and much debility. Emetics are contra-indicated.

If diarrhoea did not prevail I would give preference to the hyd. rag. cum creta followed by a saline draught or some gentle laxative as rhubarb and magnesia. Many decry the use of mercury in fevers, however I can but think that such a mild preparation timely administered would prove very efficacious. Diaphoretics are always indicated as Sweet Spirits of Nitre or the Spirits of Mindererus with Nitre. Should mild delerium prevail and the

patient be unable to sleep for two or three nights, although the symptoms contra-indicate the use of opium, I believe it would be best in all cases to employ it or some of the salts of Morphia, for the worst consequences result from such constant loss of rest and the patient invariably dies. When the tongue cleans rapidly and looks smooth and glossy, as if deprived of its papillae, it denotes ulcerations of the Peyer's patches, and at this time the oil of turpentine is strongly recommended. I have seen it much employed at the Winder and Chimborazo -

Hospitals during the war and it certainly did exert a wonderful influence. Cups and leeches were sometimes applied to the iliac region followed by fomentations, but I question whether much benefit was derived from their use. Dry cupping and fomentations often prove beneficial. Hemorrhage from the bowels often occurs and proves very troublesome; and here again the oil of turpentine is indicated. During the early stages of the fever when the patient is plethoric, the pulse hard, firm and rapid blood-letting has been practiced and according to many with marked success. I can scarcely think however that I would resort to such practice were I sure of my diagnosis. Venesection can but deteriorate the blood, weaken the

patient and renders him less able to endure the debilitating effects of the disease itself, which is self limited. Should the patient sink into profound coma a blister should be applied to the scalp which is usually shaven. Quinine has no specific influence over the disease in itself, but during convalescence it acts in combinations with stimulants and tonics and assists in invigorating and building up the constitution of the patient. It is impossible to follow any marked out course of treatment, but generally best to ~~obey~~ rely upon our judgement and reason which will dictate to us that good nursing embraces the most important treatment.

In conclusion by the administering of simple and few medicines, by regularity of diet and by constant nursing and attention, Typhoid is divested of its dread - is cured.

AN

Inaugural Dissertation

ON

Circulation

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Thos. C. Worthington

of

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The organs composing this system are Heart, Arteries, Veins, and Capillaries, and are mainly tubes of various diameters and a hollow or= gan, with the double office of recei= ving and propelling the blood. As the heart may be considered as the engine which works the whole machinerary of the circulating system I will commence with its description it is located in the thorax or chest, resting by its lower surface on the diaphragm, and somewhat to the left of the median line. It is of conical form, made of animal mus= cular fibre, the fibres crossing them= selves in several directions, many of

these fibres, anastomose in many places. The heart is a double organ one part being called the arterial heart the other the venous heart, since the former receives and propels the arterial blood, while the latter, circulates venous blood. Again, each of the two sides or hearts are divided into and auricle and a ventricle. The quantity of blood which the heart contains is about one pint; The auricles are the uppermost cavities of the heart, and are somewhat smaller than the ventricles. The auricles also have the thinest walls, and are capable of considerable dilatation, since by a sudden effort of

the body the blood is liable to be sent in great quantities to the heart, and the veins would be in danger of rupture were there no elasticity in the receptacle. On the other hand the thickened walls of the ventricles give increased power of contraction. This is needed because the ventricles drive the blood from the heart, and the auricles receive it on its return. The right ventricle propels the blood to the lungs only, while the left sends it to every other part of the body. The left auricle receives the blood from the lungs only, while the right receives it from all other parts of the body. Between the auricles and ventricles are peculiar forms of mus-

cular and tendinous fibers resembling cords and pillars, and are termed valves, making a sort of curtain to allow the flow of blood from the auricles to the ventricles, but not in the opposite direction. At the point where the arteries are given of from the ventricles are found in each three crescent-shaped folds of semicartilaginous tissue called Semi-lunar Valves, to allow the motion of blood in an outward direction, but to prevent the return which is called regurgitation. In addition to the fascia and fatty matter which immediately invest the heart, this organ is inclosed by another membrane in the form of a shut sac,

a fibro-serous membrane called the Pericardium. This contains a small quantity of fluid somewhat like water, so that the heart actually floats in a liquid and does not rest firmly upon any hard surface. The pericardium not only exists as a loose sac about the heart, but is reflected upon it where the vessels are given off; covering it in the same manner as the fascia cover and protect the muscles. Having now given a full description of the heart I shall next take up the arteries, they are tough and cylindrical tubes which convey the blood from the heart to different parts of the body. They are made up of three membranes, of which the

middle one deserves especial attention. This is an elastic coat composed of yellow fibrous tissue in order to aid in the circulation of the blood. The inner one is smooth and of a serous character, for the ready passage of the blood over it. The larger arteries are nourished by a capillary net work which is made of adjoining blood vessels. Nerves are distributed to some arteries but ordinarily they only accompany them. The starting point of the blood through the system is through a large trunk as it were which is called the Aorta artery. It is nearly an inch in diameter, and ascends in a perpendicular

direction for about two inches, when it makes a curve upon itself, and decends through the thorax into the abdomen until it reaches the lower part of the lumbar region when as is the case with most large arteries it divides into two branches called the common iliac arteries. Between the curve of the aorta and the heart no branches are given off, but from the summit of this curve to the subdivision in the abdomen a great number of branches are given off and distributed to the different portions of the chest and abdomen. The first branch arising ~~arising~~ from the summit of the

aortic arch is the Innominata. Next comes the Carotid, and both distribute themselves to the head and upper extremities. The Innominata on the right very soon becomes the subclavian, after which the corresponding arteries of both arms receive the same name. The Subclavian Artery, as its etymology implies, lies directly beneath the clavicle until it reaches the axilla, where it receives the name of Axillary Artery. Then as it passes along the inner side of the humerus it is called the Brachial, until it has passed beyond the inner side of the elbow, where it is divi-

ded into the Ulnar and Radial corresponding in position and direction to bones of the fore-arm. Occasionally the branching takes place higher up. When these have fairly passed the wrist, they join again and form an artery which describes a curve at the base of the metacarpus crossing the palm of the hand, and called the Palmer Arch. Small branches are given off from this which supply the hand. The next in rotation is the common Carotid Arteries, one on each side of the neck, pass upwards from the innominata and subclavian nearly as far as the

angle of the jaw, when they divide into the internal and external carotids, the former furnishing blood to the face, and the latter to the brain and back part of the head. The vertebral Artery is also given off from the sub-clavian, which, passing backward, enters the spinal-column at the sixth cervical vertebra, and passing through a foramen in the transverse process of each of these vertebra, and is given off in the posterior portion of the brain. This artery in the brain meets with the terminal branches of the internal carotid, so that the blood can easily reach the brain from either direction. By this arrangement,

if from any accident the flow of blood to the brain in either of these channels should be obstructed, the other would supply. After the aorta fairly commences its decent it is called the Thoracic Aorta, it sends off several small branches which nourish the heart, lungs, and diaphragm. Then we next meet with a large trunk given off just below the diaphragm, about half an inch in length, called the Celiac Axis, which gives origin to the Gastric artery supplying the stomach, then the Hepatic, runing to the liver, and the Splenic furnishing blood for the spleen. Below this we find the Renal Arteries

supplying the kidneys, and the two Mesenteric arteries which give blood to the intestines, and lastly the aorta gives off the Lumbar Arteries which supply the external muscles of the abdomen. The aorta now divides into the Iliac Arteries opposite the fourth lumbar vertebra for the supply of the lower extremities. These receive their name from being near the ilium, and each of them soon subdivides into the External and Internal Iliac, the External supplying the greater portion of blood to the leg. As soon as it passes over the pubis it becomes the Femoral Artery, which at first is quite external lying just

beneath the skin and upon the pubis; but as it passes down the femur it becomes deeper and deeper into the soft parts until it makes its appearance behind the knee where it receives the name of Popliteal Artery. This is only a few inches in length and at the upper extremity of the tibia divides into the Anterior and Posterior Tibial Arteries. The former runs along the outer portion of the tibia and over the tarsal bones, until it reaches the Metatarsal, when it becomes the Dorsalis Pedis which gives off two branches to each of the toes, and supplies the upper part of the foot with blood. The Posterior Tibial follows upon the back side

of the leg a similiar course to the anterior tibial, and supplies the sole of the foot and toes with blood. The arteries which I have thus far described are but a few of the principal ones, as at nearly every inch of their course larger or smaller vessels are given off according to the nature of the part to be supplied with blood, and, with a few exceptions, such as the circle of Willis all terminate in minute vessels called Capillaries. These are minute tubes, and are always the termination of arteries. They are of a uniform size and very regular in the distribution of their branches, without any increase

in their diameters. There is however an exception to this rule when red blood is not required to nourish the part; as in the white of the eye, finger nails &c; where the capillaries are too small to allow the corpuscles of blood to pass through. I shall now commence the veins which convey the blood from all parts of the body to the heart. Like the arteries they have three coats, and the larger veins follow the same general course as the large arteries. The smaller veins are much more numerous than the smaller arteries, and are most abundant just beneath the skin. The whole volume of the veins may

be regarded as a large cone, with the base at the surface of the body, and the apex at the heart, so that in these vessels the blood is continually flowing faster and faster, in consequence of the fluid coming into a larger channel from small extremities, while the reverse happens in the arteries. The veins are much thinner than the arteries, so that after death they most usually collapse. I shall now describe the location of the larger veins, which usually lie near the large arteries and generally have the same names. But there are several remarkable exceptions to this, as in the brain

Here are but few veins, but several channels. These are canals in the dura-mater of the brain having this membrane for its outer coat and the serous layers of the true veins for its inner coat. These run in different directions on the inside of the skull, and most of them empty into the great veins of the neck. Their probable service is to afford a free passage of blood from the brain, even by excess of arterial action this organ should be charged with blood. Another apparent exception to the ordinary system of veins is seen in what is called the Portal system. This comprises those

vessels which receive their blood from the intestinal canal, the stomach, and spleen. As these small vessels unite into a larger trunk, instead of passing directly to the heart, they form what is called the Portal vein, which empties itself into the liver. This vein ramifies into every part of the liver, where the blood is again collected by a series of vessels which unite into several trunks, called the Hepatic veins, and which convey the blood to the heart. The design of this arrangement is not certainly known, although it is probable that the blood which returns from the alimentary canal

is not fitted to enter the general circulation until it has gone through some change in the liver. The veins all take their origin in the capillary vessels in every part of the body except those of the stomach, and in number and length exceed those of the arteries. In the lining membrane of the veins we find also a peculiarity not presented in the arteries. This is the presence of folds, so that pouches or bags are formed, which readily suffer the blood to flow towards the heart, but almost entirely prevent its passage in an opposite direction. They act in the same manner as valves in machinery

although with no loss from friction and consequently no necessity of a lubricating fluid. The arteries and veins very frequently open into each other, allowing a ready flow of blood from one vessel to the other, even if the flow does not happen to be in the most favorable direction from the center of circulation to the extremities. This relation of parts is called Anastomosis.

This arrangement gives a plentiful supply of blood to every part of the body if by wound or pressure, the ordinary channel of blood to any part should be obstructed or completely closed up.

Anastomosis is most frequent in the veins and superficial arteries, since these are most liable to be thus impeded. The blood of the human system amounts to about one sixth of the weight of the subject. Its specific gravity is a little greater than that of water. It is of a bright scarlet color if drawn from an artery, or dark purple if taken from a vein, with a taste slightly alkaline, and an odor resembling that of the breath of the animal from which it is taken. It penetrates every solid tissue of the body, as may be known by any part being

punctured with even the finest
needle, when blood is sure to follow.
If the blood be examined with
a microscope when freshly drawn,
it appears to be made up of a
transparent liquid called the
serum, and a number of minute
circular bodies mostly of a red
color, called corpuscles. This fluid
is found on analysis, to be made
up of fibrin, albumen and sev-
eral salts, some of which are found
in distinct crystals. After it has
been drawn from the body a
considerable time, it separates
into a thickened mass called
coagulum, made up of the fibrin

and the corpuscles, while the serum and the albumen still remains as a transparent fluid. The red corpuscles are in reality nothing but a cell, that is a bag or sac containing the fluid composed of the two proximate principles globuline and hematine. Besides the red corpuscles, there are also white corpuscles. They are however by no means so abundent as the red when the body is in health. But in certain diseases, and especially if there be a wound in any part of the body to be healed, the white corpuscles are developed at a great

rate, although their abundance ceases when the system is restored to a sound state again. Their average diameter is about the same as that of the red.

AN

Inaugural Dissertation

ON

Typhoid Fever.

SUBMITTED TO THE EXAMINATION

of the

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of

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of the

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

Doctor of Medicine,

by

[redacted]

of

[redacted]

Session Fifty-eight. 1866.

"Scilicet et sacra est medicina, vetusque Deorum
Inventum, et sacri medici, quibus auctor Apollo;
Qui revocare animas jam caligantibus Orci
Faucibus impositas, ad carae munera vitae,
Aethereosque haustus, et dulcia lumina possunt."

"Arida convellit fervens praecordia febris,
Et Phlegethonteo me coquit igne focus.
Aret, et exusto tabescit, lingua palato,
Siccaque compressis faucibus ora tacent."

Typhoid Fever.

The title of this Inaugural explains the character of the affection under consideration. Fever a term by no means distinctive of any [illegible] but a certain state of the system is induced, and therefrom is exerted a specific influence manifesting itself by certain signs and symptoms - from which a conclusion can be deduced of the incipient disease. The term Typhoid, - signifying a morbid inflammatory condition simulating Typhous, - informs us that a low condition peculiar to the disease is observed in [illegible]

But although this term is a specific

of a certain malady, there are certain
states in which the low condition
of the patient resembles that
of the third stage of Typhoid Fever,
and to these, in consequence, has this
term been applied = It is from this
fact, that many have objected to
Typhoid, as conveying a false idea
of the peculiar form of disease it
is intended to express: and numerous
have been the names conferred on it
to supply a clear & simple definition
of its nature =

Fever is said to exist
when we observe an accelerated pulse,
furred tongue, hot skin, thirst
& preternatural thirst. These, however

are preceded generally by symptoms more or less marked & which vary in extent & severity serving to indicate that a state of disease is about to be induced; & these forerunners are: malaise, lassitude, & rigors; which latter, when present, serves to indicate the commencement of the febrile attack. Now the contentions of the respective leading partisans of the profession to prove the similarity of Continued fevers are of no mortal utility to mankind, nor a step towards the advancement of Medical Science. Every physician admits that fevers have something in common by which they have been denominated such—

being a perturbed state of the system revealing its condition by certain [illegible] which [illegible] are ever after recognised as consequents or accompaniments of this disordered state. How to prove that there is no specific difference between various kinds of continued fever and also none between continued intermittent & remittent as Dr Dundas of Liverpool [illegible], is absurd & futile. There are certain symptoms in all fevers, as has been remarked, which cause them to be referred to the same class, and these characteristics are essential to constitute them as fevers. Now if there be certain essential symptoms, we must expect

at some future period, to discover others distinct in their nature, but which before were either absent or [illegible] our notice. These peculiar symptoms are the foundations upon which is based the specific nomenclature of disease; and from such a mode of procedure, that of observing the [illegible] of the malady [illegible] there was conferred the title upon this disease — Typhoid fever.

Dr [illegible] in a very elaborate series of papers, endeavors to show & that conclusively, that the various forms of fever now know as febricula relapsing, typhoid & typhous are [illegible]

distinct, and upon this subject holds the following: they are "as distinct from each other as are measles, scarlet fever & small the poison of the one being by no combination of circumstances capable of producing, inducing or exciting the others;" and to this we may not inappropriately add Intermittent and remittent fever — being evidently types sui generis.

Typhoid fever has received various appellations according to the various opinions entertained of it by those writers who have treated of the subject. Dr Wood, in his admirable work, speaks of it as Enteric, and as reason gives, that

that the disease is situated principally or affects especially the intestinal tract. This of Dr. Wood's is but a modification of that used by M. Petit, and its claim to preferance is simplicity. Formerly called Typhus mitior, Bretonneau in order to express the peculiar & distinctive rash attending it conferred on it the name of Dothenenteritis and in the same sense originated follicular enteritis. But by what name soever we denominate it, the symptoms are essentially & specifically the same; whence the heading of this thesis will in all respects subserve our purposes in treating of the subject.

Symptoms. Typhoid has in the beginning the symptoms common to most febrile affections. It generally comes on insidiously & gradually increases in intensity so that we are frequently unable to discover the exact moment of its existence. There is usually a chill at the onset, followed by the common symptoms of fever. The patient feels uncomfortable, complains of weariness, malaise, pains in the limbs & frequently headache. The skin is hot, the face flushed and the pulse accelerated; the tongue is coated with a whitish fur and there is slight anorexia. These symptoms may continue for several days, when the patient becoming unable to experimentally his customary employment, takes to his bed.

During this period, he frequently has chilliness alternating with flushes of heat, but these may be so slight as to escape notice. The bowels are frequently loose, & diarrhoea makes its appearance, or the bowels are extremely susceptable to the influence of cathartics even in minute doses.

The disease, having been fully formed and this we call the first or incohoating stage now exhibits the ordinary phenomena of fever, frequency of pulse, hot & dry skin, flushed face, debility & loss of appetite; the pulse ranging from ninety to a hundred & twenty in the minute. In some the pulse is of considerable strength & fulness;

in others less frequent small scarlet [illegible].
The face presents a remarkable [illegible], differing from that observed in other fevers; being in some instances of a purplish hue, in others of a dusky tint, & a more or less marked heaviness of expression. There are also dull aching pains, resembling those inflicted by blows from some obtuse substance. There is also bleeding from the nose by some considered diagnostic, and great jactitation & insomnolency.

After a few days, these symptoms continuing, the pulse becomes more frequent & weaker, the skin hot, the [illegible] & dushings of the complexion deeper, the tongue still furred, and red at the tip & edges, is either clammy or dry. The stomach is frequently irritable,

diarrhoea often present; pains in the abdomen augmented upon pressure in the right Iliac region; tympanites from distention of bowels & gurgling upon pressure by the hand. The urine is scanty, high colored & not unfrequently there is dry or moist cough with the usual Bronchial signs upon auscultation. Such is an enumeration of the symptoms which take place prior to the seventh day when others of greater diagnostic [illegible]

The tongue which had been previously moist, becomes dry & of a darkish color. On the abdomen appear a number of red spots resembling flea bites which gradually extend to other parts

The abdomen is also distended, a [illegible] presenting from the pubes to the [illegible] cartilage. Small blisters - sudamina - have been observed by some to make their appearance about this time; their constancy, however, is questionable. These make their appearance first upon the chest and then extend to other parts in succession.

In this stage the headache subsides, and gives place to delirium sometimes attended by ringing or buzzing in the ears and then have been so greatly augmented, as to amount to, or cause deafness. The eyes become injected & assume a glassy appearance - often observable from the [illegible] of the [illegible].

Should it be requested of the patient in this condition to protrude his tongue he does so slowly or only partially and when once out returns it slowly & not unfrequently allows it to remain extended as if he had forgotten to return it.

The disease continuing, the tongue assumes a darker hue, sordes are collected about the gums, & a peculiar unpleasant odour emanates from the body. Vaccination happens, and the helpless patient, having assumed the supine position, slips down in bed from debility & incapability of retaining this posture. Frequently there are incontinence of urine, & involuntary fecal discharges—

signs of imminent danger to the helpless sufferer.

It is at this moment that a change for better or worse takes place and we now proceed to a consideration of the symptoms observable in either case. In case of a favorable issue, the pulse becomes fuller & less frequent, the delirium or stupor subsides & the tongue becomes moist & cleans itself from the tip & edges. The patient observes what is occurring around him, the abdomen diminishes in size, and the appetite returns, or the anorexia, at least, is not so great.

Under this propitious state, convalescence begins, & the emaciation before unobserved becomes more manifest.

If the disease is to terminate unfavorably the pulse gives way & becomes fluttering or excessively frequent, or slow & scarcely perceptible; the abdomen becomes [illegible] distended; the extremeties cold & clammy; there may be hiccough also; and finally, the countenance assuming the hippocratic aspect, life's lingering spark is extinguished.

These are cases which succeeding to a favorable issue, are still slow to complete recovery; and in these the tongue, instead of cleaning from the tip & edges, throws off its fur in flakes immediately to be replaced by new formations. These flakes are thrown off from the centre or towards the base, leaving the surface, red shining & smooth

as if the papillary structure had been destroyed. There is often scurvy of the mouth, and the velum and arches covered with exudation — a sure sign of incipient amelioration of the disease. When the patches are detached & those which afterwards form remain, the speedy recovery of the patient may then be anticipated. The successive cleaning & coating of the tongue with fur is of important interest to the practitioner, as it is an indication of increased intestinal disorder, and serves to guide him in directing remedies to this symptom. The patches of fur are implicated in this state of the tongue and should the patient go on

to recovery from the timely & appropriate administration of medicine the least excess on the part of the convalescent may bring on a violent & probably a fatal recurrance of the disease. Night sweats, fretfulness, impaired memory, adematous limbs, depression & wakefulness are concomitants of this state. Abscesses, boils make their appearance in various parts of the body; and upon cessation of these symptoms, the appetite returning the invalid rapidly gains strength, flesh and health.

Peritonitis, one of the results of this affection, is most terrible & sometimes insidious in its

in its approaches. It may occur with or without perforation. In perforation there are: rigors, violent pains in the abdomen; the knees are drawn up towards the trunk; the face becomes ghastly & assumes an anxious expression. There is frequent & contracted pulse, obstinate vomiting & constipation, and eventually collapse of the circulation taking place, death speedily ensues in two or more days. Such an occurance may supervene as early as the twelfth or as late as the fortieth day.

The termination of the disease is usually variable:

happening on the sixth, seventh or eight
day, but generally on the twentieth or
thirtieth. It usually takes place during
the second or third week, though it
is sometimes delayed until the ninth.
Convalescence may be ushered in by
decided improvement in the patient
on the Eight or ninth day, but it more
frequently happens at the third week.
This estimate applies to severe cases
of cases many of a milder form,
improve early and linger on to the
fourteenth day.

The hair frequently
falls out during recovery, but is
speedily replaced by a new
luxuriant growth.

The vesicles of the hands and feet desquamate, which likewise after the lapse of a short time is replaced by another pellicular coating.

Diagnosis = From what has been said, the diagnosis is evidently easily made out from the peculiarity of the symptoms enumerated =

The Pulse is different in different individuals; age, sex, habit & constitution remarkably modifying it; as likewise the different stages of the disease.
It is commonly frequent, generally full & strong in the primary stage;

sometimes feeble, and mostly always becoming so, as the disease advances. Sometimes, though rarely, the pulse is not accelerated in the slightest degree from that observed in health, but that state of the pulse most characteristic & generally found at the incipiency of the disease, or towards its termination is its frequency, smallness & want of power & in the latter stage irregularity or intermittency is occasionally associated. This latter Louis considers to depend on, & to be connected with, softening of the fibres of the heart.

Headache is generally complained of in the beginning, but this soon gives place to Delirium

It usually continues for a week.

Delirium may be slight or amount even to frenzy; sometimes it is hysterical, at others whimsical. Not infrequently, the patient will imagine himself to be elsewhere, will utter disconnected sentences & speak to imaginary persons about his bed. He may be so delirious as to get out of bed and endeavor to overcome those opposing his departure. Frequently it happens either in this case or whilst struggling in bed, that he becomes exhausted, and sinking into a profound sleep, makes rapid strides to a favorable and happy convalescence.

Innumerable almost are the various contortions of the body, expressive of [illegible] of the patient in this state; some reaching to the ridiculous.

Hebetude is also observed at the commencement of the disease; and is characteristic of this stage. The patient exhibits an apathetic expression and on many instances [illegible]. With advance of the disease so also the [illegible] and should questions be asked in a loud voice, the patient returns [illegible] in unintelligible words.

In this state the patient is observed to remain quiet for a few moments as if sleeping, the eyes, fever, the pupils concealed beneath the upper lids; but, he remains so for a time only, when arousing from his lethargy, he starts, rages like a madman.

Hemorrhage is a sign of important diagnostic value. As Epistaxis it occurs in the early stage of the disease, it may be either slight or copious. At a latter period, a symptom of great moment may occur and upon a precise understanding of its cause depends the life

of the patient. From [illegible] of the mucous membrane of the intestines, intense inflammatory action may arise and the disease terminate fatally to the sufferer. The consequent of this inflammation is peritonitis & is manifested previously by frequent fecal discharges or more [illegible] by diarrhoea. The discharges may be red, slightly changed, or blackish & disintegrated.

Sloughing & ulceration of the most prominent points of the body subjected to pressure often happens, & this should be studiously

guarded against by the practitioner
owing to debility & complete helplessness
on his part the patient slides
down in bed & affords us a true
idea of the treatment necessary
then to be pursued.

Tympanites occurs
about the seventh day & sometimes
though rarely as early as the third.
At first it is unobserved but
in course of time, the Colon gradually
increasing in size from distension
with gas, tympanites not only
becomes perceptible on percussion
but evident to the eye. This may
be a cause of great distress to the
patient by impeding respiration

or may so disable the action of the bowels, that they cannot exert any influence upon their contents.

Cough too is of not unusual occurrence, and may be dry with no soreness or constriction of the chest, or accompanied with a slight mucous expectoration. Sibilant & dry sonorous râles are also heard being greater in intensity than those of ordinary catarrh. In the advanced disease, crepitant & sub crepitant râles are heard giving indication of inflammation of the serous parenchyma of the lungs.

The rose coloured eruptions, which distinguish this form from typhoid fever have by many been lauded as the only symptom on which to depend for diagnosing; but the constancy of its existence is not universal. Still when present we are sure of a correct diagnosis. Some authors state that it is rarely absent; others that its appearance is never seen. To this latter, we may say, that a sufficiently careful search has not been made to discover the eruption; & to the first, that the experience of others prove directly the contrary of the assertion.

These spots appear in succession, about a line in diameter slightly elevated, usually roundish and disappearing under pressure. They appear between the seventh & fifteenth day; in some cases early; in others late. A few appear first on the abdomen; they then increase in number & gradually extend to the thorax, upper extremities, face, neck, back & lower limbs. Their existence upon the abdomen & face is more frequent than the others.

The tongue's appearance is also of importance; being, at first, covered with a thin whitish fur then, it becomes dry or moist & appears

ed as the [illegible] stages. This happens between the formation of the [illegible] & the seventh day. From this time the tongue becomes dry & brownish in [illegible] & the abdominal symptoms increasing; the lips participate in the color, & the tongue becomes hardened. The urine is scanty & high coloured & dense, being more abundant in urea than in health; occasionally albumen is found in it; many writers placing great stress upon its value as a diagnostic mark. This latter is generally an unfavorable sign. The patient, from debility, being unable to attend to the calls of nature allows the urine to accumulate

& unless speedily relieved by the catheter it may burst the bladder & light up a fatal peritonitis. Sometimes the urine passes away drop by drop — [illegible] stillicidium — and thus we are informed of the state of the [illegible] although the attendants may state that he has passed the usual amount of fluid during the day.

Tympanites & the peculiar rash shows clearly the difference between typhoid & chronic mucous inflammation of the bowels. Bilious fever is also distinguished from it, by the yellowness of the conjunctiva & skin, & [illegible] by absence of the symptoms peculiar

to this disease. There is a form of this fever termed by Louis Latent which without any warning whatever save a slight degree of fever carries off the patient — peritonitis resulting from [illegible] being the cause.

Pathology = Nearly every organ in the body has been observed after death to be more or less affected but those most commonly so have been carefully described by Dr Bennett. "The Spleen," he says, "was more or less enlarged or softened in the majority of cases" coming under his observation, & it "presented a mahogany-brown colour,

a creamy consistence; so that [illegible] the whole of its parenchyma could be squeezed out of its capsule." In some cases, "the spleen contained yellow [illegible] coloured discolorations with abrupt margins. Sometimes diffused in masses varying in size from a walnut to that of a hen's egg, at others disseminated in miliary spots, throughout the organ." The bursting of these altered masses into the peritoneal cavity caused fatal peritonitis.

The Lungs participate also in the affection, the bronchial membranes presenting the same color as that observed in the substance of the spleen.

There was also serum infiltrated, & the fine tubes contained a muco-purulent matter or were closed by a reddish-brown gelatinous substance. The apices of the lungs are found occasionally oedematous & sometimes the whole lung is consolidated. The peculiar color of the spleen is also to be found in them, & there is sometimes pulmonary apoplexy. [illegible]

The Mesenteric glands were principally involved, & from the constancy of the lesion observable in Peyer's patches the disease has been called Enteric fever. These glands are soft & friable [illegible] a grayish or reddish-purple [illegible]

In the first stage, the patches are raised, flesh-coloured, & either round or [illegible], the first presenting the form of a pimple, the second an abrupt elevation =

In the second stage, these patches show a tendency to ulcerate & slough, being more or less softened around the borders. In the third stage the slough separates, leaving an ulcer, which may either heal or passing through the intestinal coats adhere to the [illegible] & eating through this, cause fatal peritonitis. These patches present, under the microscope, molecules & granules, with free nuclei & cells of granular sacs = as observed in the spleen.

Causes. The [illegible] cause is unknown, but various circumstances combine to effect its production. It originates in confined cities and even the most elevated situations are not exempt. Camps, ill-ventilated apartments, the poorly-nourished vicissitudes of weather, & debility, are so many causes or more correctly pabula for its generation. Although many of ability endeavor to prove its non-contageous property, still it is undoubtedly of this nature. That it is contageous, many of our noted professors on this Continent can testify, among whom we may enumerate Prof. [illegible]

& Prof. [illegible] Flint of New York.

Treatment = The various symptoms which occur during the disease, severally require due attention & [illegible] application of remedies. I have no doubt, that in a strong, plethoric individual, the abstraction of a few ounces of blood will be [illegible] useful. The proper time for so depleting is when the pulse is rapid & strong & the skin hot & dry. Associated with this, the following may be advantageously used:

℞. Sol. Tart. Antim. ℥ß.
Liq. Ammon. Acet. ℥ij.
Aquae - - - ℥v ß.
M. ft. mist. in [illegible] ter die =

When diarrhœa is profuse, an astringent preparation timely used, is of extreme importance = 3 grains of Tannic acid & ¼ gr. of opium every 3 hours will generally check the hemorrhage. In the begining of the disease, diarrhœa being absent, it is well to clean out the prima via, and this is most efficiently done by Magnesia, but Castor oil is more beneficial if the irritability of the intestines is great.

Enemata are useful when from the irritated condition of the Stomach, medicines can not be given by the mouth. These combined with turpentine

are most efficient in Symptoms.
In determination of blood to the
head, relief, will frequently be
obtained, by the application of cups
to the nape of the neck & also by
the use of cold to the head. As the
disease generally runs a definite
course it is well to bear in mind
that active medication is not to
be observed in, since not unfrequently
the patient may be of weak & nervous
constitution & stimulants will in
such cases be demanded from the
beginning to last. Since, bleeding
generally prostrates the vital
powers it would be better when
depletion is required to trans-

by means of cups or leeches applied to the parts most complained of.

When the skin is hot & dry & the pulse weak, the Nitrous powder or effervesing draught may be used. To this in the early stage, may be added a small portion of Tartar Emetic. In delirium, Nitric Ether, and in diarrhaea Laudanum may usefully be combined with the others. When delirium is not great, a Dover's powder at night will produce in some instances very happy results, by causing the patient to sleep, from which he will awake much

refreshed. Cold sponging, when the skin is hot & dry will be found useful; & sometimes Aked water or even Spirits may be employed. Turpentine stupes to the abdomen produce in a vast majority of cases, decided improvement.

When the powers of life gives way it behooves us then to support Nature & it may be done by the use of Hauham's Tinct in half drachm doses by Hoffmans Anodyne, mild punch, brandy toddy & by light but nourishing diet.

Mercury has been found useful, when pushed so far as almost to

produce ptyalism. This practice has been recommended in the second stage when the urine is scanty & the tongue & skin dry.

℞.

Mass. pil. hydrargy., gr. ij

Ipecach. pulv.

Opii in pulv. āā. gr ij.

Aq. q. s. M & ft. pil. xij.

5. One to be taken every two hours. Should the tongue become dry & the abdomen puffed & tympanitic Turpentine has been found of most useful service in dose from x to xL gtt in emulsion with Gum Arabic, sugar & water. This remedy is especially indicated

in those cases where from the peculiar [illegible] in which the tongue cleans itself, we are lead to believe that the abdominal disease instead of improving, remains stationary, is preparing to terminate in perforation. Copaiba has been highly extolled in such cases, but the efficiency of Turpentine has a claim to attention far superior to the Balsam.

In general, it may be said, that the expectant plan of treatment is the one most to be relied upon; that is, treat symptoms as they arise: "Natura sanat Medicina curat".

The hair which ultimately falls out should be shaved off. The friends of the patient object, the application of water to the head by capillary attraction may be advantageous.

Diet. At the first the patient loathes food, & none is, therefore, requisite except some mild demulcent drinks; but when a desire for food returns, easily digested & assimilable articles of food should be used, & gradually the convalescent may return to his customary habits. Tea & toast, tapioca, & Sago are excellent during the

early stages, but towards the close
of the disease, chicken broth, light
soups & occasionally flesh may be
ordered. Care & caution in eat-
& exercise should be enjoined.
lest the least excess might bring
on a return of the affection &
a fatal tendency ensue.

AN

Inaugural Dissertation

ON

Fracture.

SUBMITTED TO THE EXAMINATION

of the

Provost, Regents and Faculty

of

PHYSIC,

of the

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

Doctor of Medicine,

by

J. Humphreys, Graff.

of

New Jersey.

Session 1865—6.

Fracture.

This class of injuries is more dreaded I believe, by members of the profession, than any other which they are called upon to attend; and very justly, for both diagnosis and treatment are often extremely difficult, and the result always uncertain. The surgeon knows, that even after all care and attention, which he can bestow upon it, his patient may be a cripple for life; a circumstance not the most pleasant in the world, and for which, though he has done his duty, he is often reproached; and even perhaps prosecuted for mal-practice. For the public expectation, that is, the majority, is, that a fracture be as good or better than it was before.

Every practitioner knows, that it is not possible to prevent deformity, or other bad result in every case, no Surgeon however skilful can promise this; I have heard Professor N. R. Smith of the University of Maryland, assert in one of his lectures to the class, that during the course of his practice, several persons had been to consult him, as to the expediency of prosecuting certain practitioners for mal-practice; on account of some deformity, or shortening of a limb, in cases where it was unavoidable; or at least, where no Surgeon could have decided as to the result, with any degree of certainty. As the result of treatment of fracture may be seen by anyone, so every one feels perfectly qualified to sit in judgment on it. Generally speaking, I believe practitioners have always a little misgiving when called on to attend

a case of fracture, and feel relieved when their at-
-ter dance upon it is no longer required.
But let us come more immediately to the subject, and
see of what this injury consists.
Definition.— A fracture is a solution of continuity
of bone, or the yielding of bony fibres; occasioned
either by external violence, or muscular contraction.
The kind of violence makes no difference; whether
blow, fall, or of a crushing kind; though the dif-
-ferent causes may produce different forms
of fracture. But this will be spoken of hereafter.
Composition of bone.— Bone is composed of about
one third animal matter or gelatin,
and two thirds earthy matter, principally salts
of lime; with some magnesia, soda &c; or, to
give its more definite composition, we may
say it contains,

Animal and Cartilage -- 33.30

Phosphate of lime ---- 51.04

Carbonate of lime ------ 11.30

Fluate of lime ------ 2.00

Phosphate of magnesia --- 1.16

Soda, Chloride of Sodium ---- 1.20

The relative proportions of the two constituents of bone are said to vary in different bones. For instance, the bones of the upper extremity contain more earthy matter, than the corresponding ones of the lower. The humerus contains more than the femur; and femur, more than tibia.

There is a great difference also at different periods of life. In youth containing a great deal more animal matter, and in old age, the earthy, largely predominating. In youth ossification

is not complete, and in many of the bones, the different centres of ossification are only connected by cartilage; varying in amount according to the age. It is this which gives to the bones of a young person, a so much greater amount of flexibility, and which renders them so much less liable to fracture. Now in old age, there is an excess of the earthy matter, principally salts of lime, which gives to them great fragility. So that very slight causes, will be sufficient to fracture even the largest bones in the system. A false step, a trip in the carpet while walking across the floor, while falls, (in which the old are rendered more liable, from a common rigidity of muscles, and in which either extremity strikes with any degree of violence,) are almost certain to produce fracture. A child on the

contrary, may fall fifteen or twenty times a day; with almost perfect impunity; fracture being of comparatively rare occurrence.

Causes.— These are generally divided into two classes. Predisposing, and efficient or exciting. The position and office of certain bones in the system, constitutes to many predisposing causes.

The long bones which furnish great leverage, and are constantly under the influence of many powerful muscles, are more subject to fracture than many others, whose office is more passive; and which consequently are more closely articulated.

The latter, break any force which may be communicated to them, much more readily.

The body of the scapula is very seldom broken:

it has no fixed position below, and therefore can receive no injury, through hand, elbow and shoulder. Its covering of thick muscles also contributes to its protection. The acromion however, is sometimes knocked off, owing to its exposed position. The coracoid being protected by the deltoid muscle, clavicle and humerus, rarely suffers fracture.

The radius from being articulated with the hand, is more liable than ulna; and the clavicle is more often fractured, than any other bone in the human body. This is accounted for by the exposed situation, conformation, and its connection with the sternum and scapula; all acting as so many predisposing causes. Certain diseases also, exert a very strong influence on the osseous system,

And are therefore capable of being no predisposing causes of fracture. Syphilis, is one of these. Common observation has furnished abundant proof, of the tendency of this disease to produce fragility of the bones. Hospitals, both civil and military, furnish abundant evidence of this. There is unfortunately too much of it. Cancer and Scurvy also tend to the same result.

Of the latter diseases, we do not see much now, and never, in its more virulent form, since its prevention is so easy and so generally known, cases are rare, and there is very little opportunity for observation of its effects. Both diseases, among them Gout and Rheumatism, are sometimes set down as predisposing causes, and there is no doubt that in some bad cases of the two diseases, they do become such. Of the relative frequency,

however, of these several diseases, in causing fragility or brittleness, I am not prepared to say; but it is highly probable, that syphilis is a more common cause than any or all the others together.—

Exciting Causes.— These are but two: External violence, and muscular contraction. The former of these is much the most common cause, and is either direct, as when the bone gives way, at a point where a severe blow is recieved, or it is indirect; as is often illustrated in fracture of clavicle, by what is known as counter stroke. A person is thrown from a horse, perhaps, and strikes upon the shoulder: here the weight of the body is at the sternal end, and acts as one of the forces, and the earth, or object which he falls against, supplies the other. The bone acted upon by these two directly opposing

force, gives way generally about the middle.

The radius too, is often broken in this manner; from the way in which it is articulated with the carpus.—

Fracture from muscular contraction, is not very common; and most generally happens to the patella or olecranon; although, if the bones have become preternaturally brittle from disease, or age, it may readily happen to others; as the femur or humerus. Indeed, cases are on record, in which it has happened to these bones, in subjects of robust health; under an extreme degree of muscular tension, in performing feats of strength. A person too, in falling backwards; in order to save himself, suddenly and powerfully contracts the muscles, on the anterior part of the body and extremities. The united forces of all these muscles is very

great; and this is the way in which the patella most often suffers this lesion. Other bones may also suffer it; and this apart from any disease; but it is of very rare occurrence.

Forms of fracture.— Fractures occur, in a number of different forms or varieties.

First— simple fracture. This is uncomplicated with any lesion of soft-parts, and the bone suffering the injury, consists of but two fragments. 2d Compound fracture, in which there is lesion of the soft-parts contiguous to the fracture of the bone, and by which there is communication between it and the external air. This form is frequently seen in gun-shot wounds. A person falls from a considerable height; the bones are fractured and their fractured extremities are forced

through the integuments; this is another way in which this form of fracture is produced. Cases of this kind most commonly occur on board vessels.

3d. The comminuted fracture; in which the bone is broken into a number of fragments. This most frequently occurs from crushing violence, and is very frequently though not always, compound as well as comminuted. Persons run over by a rail-road car, or even a heavy wagon, frequently sustain this injury

4th. The impacted; in which the bone is not only broken, but one of the fragments driven into the other, and remains there firmly fixed, or impacted and immovable. This form is most frequently seen in fracture of neck of the thigh bone.

5th Complicated; in which there is lesion of other structures; such as rupture of ligaments, laceration of blood vessels, or wounds born; sometimes important internal organs are injured; as the lungs in fracture of the ribs. Sometimes there is fracture and dislocation both. This is more likely to be the case, if the violence occasioning the injury is applied close to a joint.

Lastly, we may have two or more of these forms occurring together. Thus; we may have a Compound Communuted fracture; where the bone shall be broken in a number of pieces, and injury of the muscles and other soft structures, which will enable us to look directly upon the bone. This is very common in injuries from bullets. Indeed, when

they strike the bone with sufficient force to break it at all, they almost invariably produce this kind of fracture. Other missiles hurled with considerable violence, even from the hand will produce the same result. Rail-road casualties are apt to be of this character. This latter causes, often produces compound comminuted and complicated fracture; thus showing that forms in the same injury.

Direction.— Fractures are either oblique, transverse, or longitudinal. Of these varieties the first is by far the most common. The second, or transverse variety, is of very rare occurrence; and Surgeons having the most extensive practice, do not probably see more than a case or two of it in a lifetime.

I mean of course among the long bones; for although all the bones are more or less liable to fracture, it is in this class that fractures most frequently occur on account of the leverage which can be exercised upon them.

When the short, or flat bones do suffer this injury, (which is not of very common occurrence, for the short bones furnish no leverage, and the flat are for the most part well protected by muscles;) then this transverse variety is not so very infrequent.

The third or longitudinal variety, is also extremely rare; so much so that some authors deny that it ever has occurred; but the number of cases reported in the medical journals, and the specimens to be seen in the different museums, sufficiently prove

that though rare, they do occasionally occur.
It is said too, that they are almost always produced by gun-shot wounds; and hitherto noticed only in humerus, femur, and tibia.
In a very few cases, they have passed almost, or quite the length of the bone; but in general are not more than a few inches in length.—

Symptoms.— The most prominent of these, are crepitation, deformity, and preternatural mobility.
When bones are broken, there is in general considerable variety in the size and appearance of the fragments. One of them will commonly be found much larger than the other, or if a comminuted fracture, then generally, there will be two larger and several smaller fragments. Sometimes there is

a great number of these little chips, or spicules. The surface of the fractured extremities of the fragments, is always ragged, or irregularly serrated; with, perhaps, several long bony points. These serrations and points in one fragment, correspond exactly with the depressions in the other. (And this bears considerable resemblance to the edges of a lacerated wound in the soft structures.) When these surfaces are very irregular, there is often considerable difficulty, in getting a good coaptation of them. The surgeon cannot see, and the integument and muscles prevent his getting much information, by the sense of touch; but nevertheless, with ordinary care, reunion will take place very promptly in a majority of cases.

Sometimes however, the long bony points which I noticed above, have to be sawn off before the limb can be set at all; for if they do not pierce the integuments, they are a constant source of irritation, and a better result will be obtained by removing them, and in much less time. This is frequently the case in fracture of tibia, radius, and clavicle.

Crepitation. This is a peculiar grating sound, which is produced by rubbing together, the two rough surfaces of a broken bone. We can most generally both hear and feel it, by means of a little manipulation, if the injured bone is near the integument; and, when distinct, is considered a positive sign and characteristic of the injury. At times however, it is very difficult to obtain

this symptom of fracture. The surgeon may have to extend and counter extend the affected limb; as for instance, in the impacted fracture; where it is necessary to unlock the impacted fragments, before it can be obtained. At other times the bone is covered by thick muscles; or there may be great swelling; either of which will render it very faint, or entirely obscure it.

Deformity is not always present; but most generally it is, and constitutes a very prominent symptom. It may manifest itself in shortening, or lengthening of a limb, or by an angular displacement. It generally shows itself about the time of the injury, and is produced by the same cause. There are some exceptions to this, although it is the rule.

Occasionally, it may delay showing itself for several hours, or even days; when for instance there is a partially impacted fracture of neck of thigh bone. In this case, the patient may even be able to walk upon the limb for a considerable distance. This has occurred in many instances. Muscular action is another very common agent of displacement, or deformity; the weight of the different parts will influence it. This is very well illustrated in fracture of the clavicle: where the weight of the shoulder increases the deformity very considerably. In general also, the greater the obliquity of the fracture, the greater will be the deformity. Sometimes it is a vacuity, or hollow, in the natural situation of the bone, as in the Olecranon and Calcaneum; or an unusual [illegible], as in fracture of

lower part of thigh or leg, where the upper fragment is drawn out, by the action of the external muscles. These are stimulated to contraction, from the irritation consequent upon the injury. Again, there may be great swelling, from the effusion of serum, or extravasation of blood and lymph; which is [illegible] as a result of inflammation, and this will increase the deformity.—

Preternatural Mobility.— This is probably the most reliable symptom we have, with the exception of Crepitation. It is usually present immediately after the accident occurs, continuing to some extent up to the entire Consolidation of the bone. Here again, as with Crepitation, the impaction of the fragments may prevent its presence at all; or, at least until the fragments of the bone are unlocked. In fracture of

one of the bones of the forearm, or of the leg, the other remaining uninjured, we have the sound one obscuring, or altogether preventing the motion of the injured one. But these cases of its absence are not frequent, and may be considered only as occasional exceptions to the rule. Beside these prominent symptoms already mentioned, there are some others, such as loss of function for instance, the person will be entirely unable to make any use of the affected limb, or other part in which the fractured bone is situated. This in connection with one or more of the others, would be of considerable value; but alone would not be at all reliable of course, as other injuries might occasion it, as well as fracture. In those fractures occasioned by external violence, there is also more or less contusion and injury of the soft structures about the seat of the fracture,

causing extravasation of blood, and serum; this in turn produces pain and swelling, proceeding sometimes to a considerable height; greatly influenced of course, by the amount of violence inflicted, and also the amount of motion the patient may be subjected to afterwards.

Mode of repair.— It will be plainer perhaps, and more clearly understood, if we divide this into four stages. The first stage, we will consider, to be one of preparation. One in which the parts are recovering from the shock of the injury. The blood, or serum which had been extravasated is being absorbed away swelling subsides and pain ceases. The tendency to spasm in the muscles has also disappeared, and the fever if any had existed has vanished. The ends of the fragments are now in a

suitable condition for the process of repair.
This is the first stage in the reparative process, and occupies the time from the moment of injury to the seventh or eighth day. Then there is a period of exudation; in which plastic lymph is effused in and around the broken ends of the fragments, and also to some extent among the soft structures around the point of fracture. This plastic matter, is thrown out also, into the medullary canal; for its lining membrane is also in a state of inflammation, as is shown by its descolored condition. This second stage lasts from the seventh or eighth up to about the eighteenth; and is followed by a period called the period of development.
The lymph which was effused during the second stage, is during this period, chan-

-ging in consistency, becoming more dense, and converted first into a kind of fibrous tissue, next cartilage, then osseous tissue or bone. There is no set time at which this osseous tissue begins to be developed; it varies considerably in different cases, from the eighteenth to the twenty fifth, or even more than this; local and constitution-al causes influencing it to a considerable degree. There are, then, two layers of this bony matter; one formed upon the outer sur-face of the fragments, the other in the med-ullary canal, and both extending above and below the point of fracture for some distance. These two layers support the ends of the frag-ments, until they are permanently united; which does not take place as a gen. rule, for several months; the time varying greatly

in different cases. This matter forming the two layers of broken of was called callus; by the old pathologist, on account of its hardness; which is equal to bone itself, when fully developed. It resembles bone too, very much, in its structure. On account of the office of this inner and outer layer being of a temporary nature, it was called provisional callus, while that which is formed between the ends of the fragments, and serves to unite them, is termed permanent callus. Now if the broken ends are accurately fitted together, and maintained so, then according to some authors; they are cemented together without any provisional callus being formed. Others again deny this entirely, and say that it is always present to some.

extent, in every case; no matter how accurately adjusted, or how perfectly maintained. The question however, is not one of much practical importance, for it is so extremely rare that a perfect coaptation is accomplished. The fracture is almost always oblique, and there is no opportunity of seeing the ends of the fragments. In some cases, they are covered with thick muscles, and in others there is so much swelling of all the soft structures, that if it does occur, it is only by chance; and even then, very rarely indeed can displacement be prevented; still, as a general rule it may be said, that other things being equal, the amount of callus will be just in proportion to the degree of contact, of the ends of the fragments. The union being effected, the fourth

and last stage is commenced; which is the removal of everything superfluous, so that bone and muscle, may again perform their proper functions perfectly. The provisional callus, now no longer of any use, is absorbed away until the bone is nearly, if not quite its original size; and there is nothing left perhaps to indicate the point of fracture, except a slight ridge or seam following the line of junction. The same process of absorption goes on in the medullary canal. Its continuity is restored, that is, if the coaptation has been perfect; if it has not, the new bone remains there permanent. The amount of time required to effect all this, varies considerably in different cases; generally from six to twelve months. Such is a brief description of the changes attending the repair

of bone, in the ordinary simple fracture, when properly attended to. But in cases of the fragments are not well adjusted, then a much larger amount of provisional callus is required and formed; nature herself providing, in this way, a temporary splint for the sufferer. When the ends of the fragments are completely separated, then they are united by a bridge of this callus, or new bone. In both the latter cases mentioned, a great deal more time and labor are required for the complete repair of the injury. It was formerly thought, that the Periosteum was the only source of callus, or the matter from which it is developed, but it is now conceded, that not only the periosteum, but many all the tissues near the recent injury, are capable of exuding a lymph which will unify

and become new bone. In fracture of certain pieces in the skeleton, no provisional callus is ever thrown out, such as the olecranon, patella, and neck of thigh bone, and others, invested by synovial membrane. There are several reasons for this. In the first place, there is great difficulty in keeping the ends of the fragments in apposition in fracture of these bones; second to maintain perfect rest and quiet, and third the bone here is not covered by a vascular periosteum; and the synovial membrane being irritated, throws out an inordinate amount of its own peculiar secretion instead of plastic lymph, and renders that which is thrown out by the vessels of the bone of no avail; thus entirely preventing the formation of callus. Besides, the vessels of the small fragment are all lacerated,

and, in case of fracture of neck of thigh bone, the only thing which connects the upper fragment with the rest of the body, is the round ligament; the nutrient arteries of which are not adequate to its support. In these cases therefore, instead of bony union, we have fibrous, ligamentous, or cartilaginous substance uniting them; and the part consequently will always be weak, and not capable of properly executing its functions. Fractures occurring partly within and partly without a synovial membrane, may become united by bone. This too has been a mooted question, but there is no doubt that it may and does take place. Lymph is extended and callus formed to support the fragments, as in other localities. The calcific matter is probably deposited between the fragments external to the membrane,

and having once commenced, nature is enabled to complete it within.—

Treatment.— The leading indications for this, are to procure reunion as speedily as possible, and prevent deformity.— The first thing necessary after the injury, if in the lower extremities, is of course, some apparatus with which the patient may be conveyed to his home, or a hospital. A litter is easily constructed, with a couple of poles and a blanket or sack fastened between them, or, a settee is often used; and if nothing better can be had, a door will answer the purpose.— A comfortable bed is the next consideration, and it is one of very great importance. If it is not comfortable, the patient becomes restless, and the difficulty of preventing displacement,

badly position or deformity, is very much greater, and there is also greater liability to bed sores. Besides when it is remembered that a patient is compelled, to keep a recumbent posture and perfectly quiet for weeks together, no one could fail to perceive that a good, pleasant, comfortable bed, is of the first importance, to sum up in few words, a good cure cannot be had without it. In regard to the construction of this bed, numerous rules have been laid down and suggestions made. —
It is recommended that it should be of stout slats, instead of cord or sack-bottom; in order that it may be firm and level, then a mattress of hair or cotton, in which an opening should be made opposite the buttocks, for the passage of the contents of the bowels,

and this opening closed by a door of the same manufacture as the mattress. —

Such are the rules for the construction of a bed, laid down by one of our most eminent surgeons, and, if the practitioner is going to use the straight-splint, (from foot to axilla) or double inclined plane, old fracture boxes and other apparatus of like character, then the said rules are all necessary; but with the apparatus known as the Anderson splint, where the extension is maintained by means of suspension, a good soft bed of feathers either upon slats or sacking bottom, will be comfortable and all that is necessary. Sometimes, when the reunion is tardy, and the patient is confined for an unusual length of time, or if worn out by previous disease, it may

become necessary to use a water or air bed, to prevent bed sores; which is always an unfortunate occurrence. —

In pure uncomplicated fracture of bones in other parts of the skeleton, as in clavicle, scapula, or bones of the upper extremity, the patient is generally able in a short time to move about; and therefore the fracture bed of particular construction is not of so much importance. —

We have now to speak of apparatus; or the various pieces of mechanism employed in the treatment of fracture, and the material of which they are composed. —

Splints, cushions, bandges, and adhesive strips.

Splints are made of various materials; wood, binder's board, copper, leather, belt, gutta percha

and others; just according to whim a fancy of the practitioner requiring the use of them. In fracture of the upper extremity, after it has been reduced or set, a piece of stout binder's board, by a little manipulation after being softened in hot water answers every purpose, and is just as good as the most expensive patent splint now in use. It has the advantage not only of being cheap, (which by the way is considered quite an item by most people,) but is generally very easily obtained, under ordinary circumstances. Being softened in hot water, it can be bent in any direction, be made to grasp the shoulder and extend down on the humerus, as well and firmly as one made of wood, and ex

-pressly for it. As it dries, it adapts itself to the limb, and gives a good firm support to the parts to which it is bandaged.

[illegible] re various patent splints now in use, but they answer the purpose no better, and are far more expensive. For fracture of the lower extremity the best is one made of wire, and known as the "anterior splint": invented by M. R. Smith Professor of Surgery in the University of Maryland. It is simple in construction, and combines lightness with strength. It consists first, of two wires running parallel, of any length that may be desired and about four inches apart; which are joined at each end by a single arch of wire passing directly across from one to the other. Similar arches connect

them also throughout their whole length, from six to eight inches apart. The transverse arches are all placed, so that when the apparatus is applied to the anterior surface of the limb, and the patient being on his back, their convexity is directly upwards, their concavity downwards; and at the middle of each, is an eye or loop, into which hooks are inserted for the suspension of the limb. Nothing could be more simple, or easy of construction. It is also very easily applied, and with the production of little or no suffering to the patient.—

But first the fragments of the broken bone must be put in their natural positions; and to accomplish this the patient must be placed on his back, and the upper

end of the limb held firmly by one assistant, while the lower is extended, is firmly but gradually drawn in such a direction as will restore it to its proper length and shape; while with a little manipulation with the fingers, the fragments are placed in a correct position. If there is a great deal of pain or spasm, Chloroform should be administered. The splint being made of wire and flexible, must be bent both at the foot and knee, to that extent, which will most perfectly relax the muscles of the limb; it is then laid up on its inferior surface and several strips of muslin two or three inches wide, and generally four or five of them, are passed around the limb and splint, and fastened, these only

designed to serve as a sling, in which the leg, is suspended while the bandages are applied. The limb is now drawn up gradually and gently off the bed, by means of a cord and pulley, until the whole limb is entirely clear; one end of the cord is fastened above to the ceiling, or a bar across the foot of the bed, or something else convenient for the purpose; and in the lower end is fixed a small pulley.
Around this a smaller cord, at each end of which is a hook, which is inserted into the loops in the arches of wire, and at points varying in different cases according to the place of fracture.
The limb being drawn up to a suitable distance, the bandages are next applied;

The Roller is the one usually employed, and of a suitable width for the limb; commencing at the foot and carrying it up the limb, with uniform compression, and so far as the lower extremity of the splint, or a considerable distance above the injury; care being taken not to compress the veins against the bone, for it is designed there shall be an inch or so of space between the injury and bandage. If the injury is at the middle or upper part of thigh, the splint and bandage should be carried up to, or a little above the crest of the ilium, and the bandage carried around the body to give a firmer support. A solution of starch may then be applied to the whole, to prevent any tendency to slipping of the bandage,

although such displacing will not occur if the bandage be properly applied.—
The advantages of this apparatus over all others are very many. The patient is perfectly easy and comfortable, the limb lies in a bed of its own conformation, there is equable pressure at every point.
There occurs no sloughing of the heel with its attendant suffering, because there is no more pressure upon it than any other part, and therefore it could not occur. The joint swings clear of the bed and the extension is regulated by means of the cord, to which any degree of obliquity can be given that is required. The counter extension is furnished by the weight of the body, as it lies upon the bed; if there is any

tendency to displacement outwards of the upper fragment by the action of the muscles, as is sometimes the case in fracture of the upper part of the thigh, the limb may be drawn outwards by means of the cord, and the difficulty thus remedied. There is no severe tension on any set of muscles; all are more or less relaxed, and therefore there is very little tendency to displacement, and deformity. The patient may move on his bed from side to side, or even off his bed to sit up, and with perfect safety, while it is shaken up and the linen changed; or if it be necessary, he may be moved a distance of fifteen or twenty miles, without producing much suffering to the patient, or displacement of

the fragments of the fractured bone. This has been proven by trial. —

In compound fracture, and when daily dressing of a wound is required, one bandage may be applied below the wound, the other above and between the two; and between the two a short one) which can be changed when it becomes soiled.

In many of these cases of compound fracture, such as I have seen in military hospitals, when the patient was weak and exhausted from loss of blood, or other cause, this splint has been used and limbs saved, which with any other would undoubtedly have been lost, and very likely the patient's life also.

Too much cannot be said in praise of this simple apparatus, which has so many advantages over all others, and although at

present prejudice and envy may prevent to general use; it will eventually take precedence of all others. There is also a number of wooden splints, among which, the double inclined plane is probably the best. In simple fracture below the knee, the starched bandage or apparatus, as it is frequently called, answers in many cases every purpose, and allows the patient to move about on crutches much sooner than otherwise. A vast lot of patented apparatus has been brought forward in the last twenty years, which upon trial has been found to possess no particular advantage over the more simple contrivances; and consequently it has not come into general use. In truth, in a majority of cases the surgeon is obliged, and therefore should be able to

construct splints out of such materials as the an-
ger; ready made splints, or the best materials
for making them are not always at hand.
A handbox or piece of pasteboard often has to
serve the purpose of better material. Adhesive
strips are also used; either as a retentive
means, or to effect and maintain extension
and counter extension.
Fracture cushions are bags stuffed with some
soft material, as hair or chaff, and used to
fill the interspaces between splint and
limb. They vary in size and shape accor-
ding to the requirements of the case, and
are used in accordance with the judgment of
the surgeon. —
The remainder of the treatment must be
conducted on general principles.

Cordials to restore the patient from the shock of the injury; and if there is retention of urine, as is not uncommon after fracture of the lower extremity, the catheter must be used to withdraw it; aperients if there is constipation, such as oil and salts; and if there is excessive inflammation leeches may be employed. Bleeding is rarely necessary. The chief of all agents for the pain, irritation and spasm, and to procure tranquillity - is opium; in grain doses two or three times a day, combined with some light cathartic to obviate the tendency to constipation of the bowels. The diet at first should be light and cooling, and if any fever be present, some saline mixture or antimonial should

be given. After all fever has abated the patient may gradually return to an accustomed diet; though it is best that some caution should be exercised in regard to it, and error on the side of abstinence, rather than the opposite.

If there is great pain and swelling when the separation is first applied, or if it increase after the application, it might be removed at the end of the first twenty-four hours, and re-applied; otherwise it should not be removed at all. If the fracture be in thigh or leg, it might be well to protect it from the weight of the bed clothes.

In fracture of the upper extremity, the patient is in many cases able to move about immediately, or very soon after the application of the splint; but in the lower extremity,

they must remain riveted, until consolidation of the fragments has taken place; or if below the knee until it can be put in a starched bandage, and the patient use crutches.

From the length of time in which a fractured limb is kept in one position without use, the joints and particularly the one nearest the point of injury, are apt to become partially rigid and immovable, rendering the patient much pain in attempting to use it. Especially is the case with regard to the lower extremity, in which many persons suffer more from the cause above mentioned, than from all other consequences of the injury combined. For this reason the patient should be instructed to commence moving the joint or joints,

just as soon as in the judgment of his medical attendant, there is no danger of displacing the fragments. This motion must be gentle and gradual at first, and increased until they are quite free. This is a very important part in the treatment, and should never be neglected. To assist friction with some stimulating application, such as spirits of camphor or soap liniment, will be found very useful.

As soon as the callus is sufficiently strong to sustain the broken fragments, the splint and other apparatus may be removed, the object being now only rest, until the union shall be completed; and when the patient first commences to use the limb he should exercise some care for several days, as it

still be somewhat weak.

Ununited fracture. — Fracture occasionally refuses to unite. This may happen from several causes. If the fractured part is subjected to frequent motion and disturbance, nature seems to become discouraged; the effused lymph will not ossify, and either be converted into bands of fibrous tissue, uniting the broken ends, or else a false joint will be formed, with a kind of synovial membrane and ligamentous capsule.

Second if the vital forces are exhausted by age and debility, or if the system be under the influence of certain diseases, such as gout, syphilis or cancer, sometimes the application of too much cold water, or a

fragment of dead bone; either of these is sometimes sufficient to prevent union. In these cases, the fragments are put in their natural position, the apparatus or splints applied to maintain them so, and everything done which seems necessary; but some one or more of the causes above mentioned, no callus is formed, the ends of the fragments gradually become rounded off by absorption, and a connection by ligament is established; or a false joint is the result, provided with a kind of synovial membrane, which allows the fragments to move upon each other with more or less facility.

Treatment.— To be successful in this, the cause must first be ascertained;

without a knowledge of which, the surgeon would be groping in the dark. The cause or causes being discovered, the second step is to rectify them or effect their removal. If it be debility which is one of those causes mentioned above as constitutional, then the treatment must be directed to the constitution. Good nutritious food and drink, tonics and stimulants. Lime in some form has been recommended, such as lime water and milk, or phosphate of lime. Old age itself, will seldom be an efficient cause of non-union, if the patient is in good health at the time of the accident. In gout or rheumatism, purgatives, acid drinks, Colchicum &c. If there be syphilitic taint, mercury and Iodide of Potassium. Local treatment

must also be governed by circumstances. So much motion must be rectified by absolute quiet; as near it as is possible, and if there is any displacement of the fragments they must be put in apposition, and if necessary the bandages more tightly applied to maintain them so; care being taken not to obstruct the circulation. Cold water if injurious must be stopped, dead bone must be removed by means of knife and forceps. In majority of cases after these means have been employed, a favorable termination will result. In cases however, which do not so result, there are other remedies which may be employed in conjunction with those above mentioned. Friction of hand & flannel, with stimulating

Irritants around the part to produce a greater degree of Capillary action and thereby assist the formation of Callus.
Compression by Splints board and Bandage
This must be steady, uniform, but gentle.
Blisters and Iodine are sometimes employed in cases where there is undue vascular excitement. (not in cases of recent fracture.)
Friction of the ends of the fragments, to promote adhesive inflammation around them. This may be done by rubbing one roughly against the other, breaking up any fibrous bands which may exist, and then firmly applying the splints again. Acupuncture with a long slender needle; or caution is perhaps better in obstinate cases, passed through the

limb between the ends of the fragments, or through the flesh close to the point of injury as possible, by a low thin flat needle, and retained generally until suppuration occurs. If however, it occasion severe pain and tumefaction, it must be withdrawn. Immediately after it is introduced, the fragments are properly adjusted, and means taken to keep them so, and insure at the same time proper extension and counter extension; afterwards ordinary care is all that is required or necessary.

Finally as a last resource, Excision of the ends of the fragments. This was first practised in England, about the year 1760 by a surgeon named White. —

It is done by pulling down upon the bracing, and sawing or shaving off the ends of the bone. It is occasionally resorted to, but it is difficult, dangerous, not unfrequently fatal, and not to be resorted to without absolute necessity.

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AN

Inaugural Dissertation

ON

Typhoid Fever

SUBMITTED TO THE EXAMINATION

of the

Provost, Regents and Faculty

of

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of the

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

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by

Wm. Ward. Verdin Jr

of

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Typhoid or Continued Fever, is a specific disease, depending upon an animal poison in the blood, and in most instances clearly traceable to contagion. It, not unfrequently, commences with a chill; more commonly however, before the disease assumes its characteristic aspect, the patient is affected with certain morbid symptoms, preliminary to the fever, indicating a perversion of the functions of animal life, before there is any appreciable derangement of the circulation. The patients expression of countenance alters; he is pale languid and abstracted; he is wearied from the least exertion of mind or body; he loses his apetite; his tongue is covered with a whitish fur; the bowels are

irregular, constipated, or diarrhoea exists; his senses are perverted; his sleep is disturbed, although much inclined to drowsiness. Headache is a usual accompaniment to this train of symptoms. This condition usually occupies about one week, at the termination of which the patient is unable to keep up, and is compelled to seek his bed. These symptoms, marking the incipient stage, may be absent, or at least of very short duration. Then the disease is ushered in with a decided chill, or a sense of chilliness followed by the usual phenomena of Fever: hot dry skin, thirst, anorexia, scanty and high coloured urine, with increased frequency of pulse, reaching in some cases to 140 beats per minute.

Usually however it does not attain such an height; and not unfrequently does not exceed one hundred beats per minute, throughout the whole course of the disease. The symptoms above enumerated are peculiar, in part, to the forming stages of all the fevers and exanthematous diseases. But Typhoid Fever, like the others, has certain distinctive characters, which serve to distinguish it from them. ~~Those from the others.~~ Epistaxis is a symptom - though not constant - of the incipient stage; the headache is severe and generally occupies the forehead; sometimes the trouble of the head does not amount to pain, but there is a sense of heaviness and vertigo. This symptom is not an abiding one, but usually declines

about the end of the first week of the invasion. All the senses are blunted; muscular power is greatly lessened; the expression of the face is changed, presenting an absent and indifferent appearance; An eruption, characteristic of the disease, generally appears about the last of the second week; its first appearance is made upon the abdomen; then, extending to the thorax and lower extremities; the eruption is in the form of circular spots, of a bright rose colour, which are lost in the surrounding skin. These spots usually last about three days; when they are renewed by successive crops; they are somewhat elevated above the skin and diminish slightly under pressure.

There is another eruption occuring in this disease but not essentially belonging to it called Sudamina: they are vesicular; and contain a clear watery fluid, To be observed they must be viewed sideways. A roughness of the skin is appreciated by the hand when applied to the surface; they are mostly found on the thorax and sides of the neck. Delirium generally sets in about the second week. At first it is of a wandering character; and in most instances is increased at night; the patient, although insensible apparently to surrounding objects, will, when aroused, answer questions correctly; but soon relapses into his former condition; In some instances

the delirium is wild and maniacal, requiring force to restrain the patient; the tongue, now, from being moist, becomes dry and brownish, with the lips and edges red. The abdomen is slightly tympanitic, and tender upon pressure, particularly in the right iliac region: pressure also elicits a gurgling sound. At this stage diarrhoea usually sets in, if it did not exist from the commencement. The stools may not be very frequent, or they may amount to as many as ten or twelve during the day; they may not deviate much from a healthy character or they may be thin, yellowish, "pea soup" like; and resembling pea soup in appearance; the latter condition is by far the most

common, and is almost distinctive of the disease. The stools are often passed involuntarily. Cough is generally present; the mucous and sibilant rales may be heard, more or less extensively, over the thorax. Should they give place to minute crepitation, we would have a complication of incipient Pneumonia to deal with. I may here add, that, in southern countries, particularly middle North Carolina, this is the most common and fatal complication: being insidious in its approach, and unattended by the rational signs that belong to the sthenic form: for instance, pain, rusty coloured sputa and dyspnoea. In many cases its existence is only revealed by the signs afforded

by auscultation and percussion; Hemmorhage from the bowels often occurs. It is sometimes considerable in quantity, and rapidly exhausts the patient. The bleeding is probably owing to the ulceration which exists in the glands of Peyer, producing division of some of the mesenteric veins, Hemmorhage of a passive character occurs from the nose, gums, and beneath the skin, in purple spots called Petechiæ. These symptoms are very unfavourable, and are accompanied with extreme depression of the vital powers; as is shown by the great muscular debility, dry and black tongue, the collection of sordes on the teeth and gums, a perfect indifference

as to his condition. The decubitus is peculiar: lying on his back, with a constant tendency to slip to the foot of the bed. Should the patient at this time be asked as to his feelings, he will most invariably respond that he is perfectly well; and during the mental alienation that most commonly exists, he will express a desire to go home; and, unless special care be observed, he will arise from his bed to carry into effect the delusion under which he is labouring. The patient, under such circumstances, should not be left alone; but should have the constant supervision of an attentive nurse. The stools in this condition are passed involuntary, & the urine accumulates in

the bladder: the patient's senses being so obtunded that the demands to evacuate the bladder are not observed, or at least are unheeded. It is the imperative duty of the Physician to examine the Hypogastric region at every visit, and not to be content with the statements of the nurse as to the urinary evacuation. Should enlargement or dullness exist in that region the catheter should be employed to evacuate the bladder. Hardness of hearing is a very common symptom in this disease; not occurring until about the middle stage of the disease. Causes:- I consider the disease contagious and propagated by that means. The contagion is milder

than that of Scarlatina should prey on measles;
but that it does exist I have no doubt.
In some instances it lays dormant
in the system, and is brought out from
its state of incubation by some exciting
cause; I offer, in favour of its contagious-
ness, the continued character of the fever;
its steady progression to a termination;
not yielding to remedies possessing
antiperiodic properties, or to any
abortive plan of treatment. That the
blood is depraved, from some specific
cause, I think, admits of no doubt; the
tendency to interstitial hemmorhage
and to death by coma, which I think
is the most common mode of dying,
or at least it predominates over

Asthenia, with which it is very frequently associated. Indeed the appearance presented by some patients, is as if they were labouring under the effects of some narcotic poison. Post Mortem examinations reveals no traces of disorganization of the brain to account for these morbid symptoms of the head.

Anatomical Appearance. There are but few organs in the body that do not exhibit some change in character or structure; But there are certain anatomical changes which are especially characteristic of Typhoid fever" such is the inflamation and ulceration of the glands of Peyer, the mesenteric glands are often found diseased. The

Spleen is almost universally diseased or changed, being generally enlarged and softened.

The disease as before remarked is one of great debility; and, in middle North Carolina, has in the last few years, almost supplanted diseases having for their origin a miasmatic cause. Remittent or Intermittent fevers are rarely ever seen. Typhoid fever prevails to a greater extent than any other disease; and this section of country ~~above alluded to~~ has not been free from it in the last four years. At its first appearance, our Physicians being used to the treatment of Intermittents and Remittents fevers, were ignorant of

its Pathology; and it proved a most fatal malady under their active treatment. Some were even heroic enough to bleed generally; and unfortunate enough to loose a large majority of their patients. Cases may occur in which the use of the lancet is admissible, and even necessary; there is high authority for such practice; but my opinion is - after some experience - that general bleeding in well marked and uncomplicated "Typhoid Fever" is decidedly merged into the very extreme of rashness.

Cathartics were used to a very great and injurious extent formerly; but their usefulness is not borne out by experience and they have fallen into

disease since the inflamation and ulceration of the glands of Peyer is admitted to be Pathognomonic of the disease. Is it not then reasonable to suppose that these inflamed and ulcerated glands are made worse, instead of being benefitted, by Cathartics or aperients, which increase the peristaltic action of the bowels, and irritate directly, by producing a more constant passage of fecal matter! And is the impoverished and vitiated condition of the blood likely to become better, while this action continues from the bowels in the form of a watery diarhoea? It is my belief that we might, with just as much propriety, attempt to

heal a fractured limb without the use of splints and rest, so to try and effect the cure of these inflamed and ulcerated patches by irritating and keeping them in continued motion, by active or even moderate purgation. As remarked, in the account of the symptoms, in almost all cases, diarrhoea exists; and, in the majority of those cases, in which it is not really present, the bowels are very susceptible to the action of cathartics; and, if there is no other danger, there is at least the great danger of producing hypercathartis by this use - which in itself is often the sole cause of death in Typhoid Fever. My opinion is that those cases will do best in which the bowels can be restrained to two or

three evacuations a week.

The oil of turpentine, when judeciously used, is a good remedy; but I think is productive of harm by its indiscriminate use. It is indicated, and is a good remedy in that condition when the Tongue parts with its coating in flakes from the center to the tip and edges, presenting a shining and glossy appearance. In the majority of cases, modified as they are by our Southern climate, it will not do to rely upon it as an infallible remedy:- at least such is my opinion

The treatment which I deem the best and most successfull is the following: when first called to a case, if the bowels are not already sufficiently open, administer

a mild aperient or enema — the latter of which I think is preferable; but more frequently the use of opiates and astringents are demanded to keep the diarrhoea in check. For this purpose the acetate or sulphate of Morphia, in the milder cases; but, in the more severe, a combination of opium and acetate of lead or opium and tannic acid, may be given every two three or four hours as the case may require. In the very commencement of the case, I should prescribe a saturated solution of the chlorate of Potash, with the addition of a small quantity of muriatic acid, of which the dose, for an adult should be a tablespoonfull every three or four hours, until the patient

is convalescent. I am not able to say what is the peculiar "modus operandi" of this remedy whether it acts, indirectly, through the blood, (which I think is the most probable) or directly, upon the glands of Peyer. If the patient is restless and cannot sleep, a teaspoonfull of the officinal solution of the sulphate of Morphia, Lupulin, or extract of hyoscyamus, may be administered. Compound spirits of nitric Ether is a very good remedy to quiet nervous restlessness, and may be administered in half drachm to drachm doses. If there is delirium, or any tendency to it, the head should be shaved, and cold or warm applications kept to it, as may be most agreeable to the patient. Flannel wrung out of

warm water and applied to the head, in some cases, will produce the happiest effect in patients affected with delirium. All cases of Typhoid Fever will do better to have the head shaved, or at least to have the hair cut very close, whether there be delirium or not. The mere removal of the hair produces good effects by removing delirium or mitigating it, and by relieving nervous restlessness. The patient's body and bed clothes should, in all cases, be often changed, and his room should be large and well ventilated. Sponging the surface of the body with cold, tepid, or acidulated water - as is most agreeable - is a remedial measure, that much good

may be expected from. The use of acid and acidulated drinks should be allowed in moderate quantities

About the second week of the disease, the typhoid symptoms set in, when stimulants and tonics should be resorted to; although, in many cases, they will be demanded much earlier. Wine-whey, brandy, and eggnog are amongst the most useful. As a tonic I would prefer the infusion of serpentaria. Quinine answers a good purpose in small doses. These are administered "pro re nata".

On the supervention of hemmorhage from the bowels, large doses of acetate of lead combined with opium are remedies from which much good may

be expected. Six to ten grains of sugar of lead, with one or two grains of opium, given after every bloody stool, will seldom fail to check the most alarming hemmorhages. No evil results will be produced by such doses of sugar of lead; but numerous instances could be brought to prove their marked benefit.

Blisters to the abdomen are of the utmost importance; more particularly over the right iliac region; and may be frequently re-applied with advantage. The local abstraction of blood, by cups or leeches, from this region, may be serviceable in the early part of some cases. Meteorism yields readily to

assafoetida given in pill or by enema. Oil of turpentine here acts well, provided the patient's stomach will tolerate it. ~~and~~ It will certainly remove the tympanitic condition; but in a great majority of cases the stomach will not bear it. The diet, from the begining, should be nutritious; and after the second week, and oftner sooner, good rich soups, beef tea, &c; with Eggnogg, or milk toddy, should be administered; and I think the patient should be forced to take a few spoonfulls of such nourishment every three or four hours as he would take medicine; for, in many cases, the anorexia is so great that, if you wait for them to call for food, a great many will die from absolute inanition

There is sometimes a very dangerous and fatal complication of which I have neglected to speak. I allude to perforation of the bowels, resulting in sudden and alarming Peritonitis; most cases result fatally, the remedy from which the most can be expected is large and repeated doses of opium.

In the general management of each case, I believe in giving nature a fair chance. I believe there is such a thing as the "vis conservatrix naturae"; notwithstanding very many in this age, scout at such an idea; and I believe that the tendency of most cases is to recovery, and can be greatly assisted by the medical art; but at the same time

I think many a hapless individual has fallen a victim to the well meant but injudicious interference of the Physician, and perhaps as often in Typhoid Fever as in any other disease

AN

Inaugural Dissertation

ON

Diphtheria

SUBMITTED TO THE EXAMINATION

of the

Provost, Regents and Faculty

of

PHYSIC,

of the

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

Doctor of Medicine,

by

John H. Sudlow

of

Maryland

Session 1865-66

Diphtheria

Few diseases have awakened more attention, both among the profession and public generally than those which have been classed more or less under the term diphtheritic. Nor should this be wondered at, when we consider the nature and the terrible calamities with which it is attended.

This disease appeared about the year 1826 and named by M. Bretonneau of Tours who first described it diphtheritis.

It was in the first place supposed to be a severe inflammatory disorder of the throat and a local disease,

but since it has been more fully ascertained to be constitutional.

The effects of this disease upon the organs of the throat, were regarded by Dr West to differ in a great measure those of croup.

But the commencement of redness is seen, which is covered with a coagulated mucous.

The red spots which seem to blend into each other present a whitish or ash-colored appearance of a membranous consistance.

In this Stage however it may easily be detached as it does not adhere tightly to the mucous.

membrane of the part, except when the prolongations of concrete matter extend into the muciparous follicles.
When the false membrane has been removed the mucous surface is red, from which blood may exude.
According to W. Bretonneau this disease is of a specific character, consisting anatomically in the promotion of false membrane and has the power of again reproducing itself.
The views which I have given are some of the specific characters of this disease.
We have no distinct description

of this malignant affection of the throat at the time when Homer lived, but about ten centuries later there were some articles published in the writings of Aretaeus on this disease. He describes it under the name of Egyptian or Syrian ulcer.

This affection in the two countries was principally confined to children. It was characterized by large ulcers forming in the throat, with fetid breath and very often by difficult breathing. About the year 1337 a fatal epidemic of malignant sore

throat appeared in Holland.
Hecker in his discourse on
epidemics in England, says, that
in January of the year there
appeared in Holland another
disease which from its dangerous
and inexplicable Symptoms,
spread fear and horror around.
It was a malignant and
infectious inflamation of the
throat so rapid in its course
that, unless assistance was
procured within eight hours,
the patient was past all hope
of recovery. Sudden pains
in the throat, and
violent oppression of the chest,
especially in the region of the heart,

Medicines & applications, and at length naturally produced it.

During the paroxysms the muscles of the throat and chest were seized with violent spasms and there were but short intervals of alleviation before completion of such seizures terminated in death.

Unattended by any premonitory symptoms the disease began with a severe catarrhal affection of the chest, which speedily advanced to inflamation of the air passages.

There was a similar epidemic occurred in Holland 220 years later,

which was very fatal. It was not confined to Holland, but extended its ravages through other parts of Europe.

This disease however was not as rapid in its course as the one just described. It began with a slight fever resembling that of common catarrh and generally showed its malignity during the paroxysms. In the year 1876 this malignant form of disease made its appearance in Paris about the beginning of the seventeenth century the epidemic of Angina occurred also in Spain.

The onset of this loathsome disease is usually preceded by giddiness and chills, which are soon followed by fever.

This continues for a short time, when intense heat is experienced. The face soon looks red and sometimes swollen, the eyes become often much inflamed.

Upon examination of the throat, we will find the uvula and tonsils swelled and all the surrounding parts presenting a florid red color.

This is soon followed with a patch of irregular form and a ragged edge,

the borders of which, still present the florid red color.

This disease called diphtheria which was described by M. Bretonneau in 1826 has undoubtedly changed and assumed new forms, and has also been attended with new dangers during the last few years.

There has been for six or seven years past a form of diphtheria, extending its ravages far and wide over this country, with terrible fatality, which would almost induce one to attempt to establish a line of demarcation; but when we notice

its mode of invasion we will readily recognize its contagiousness except that it has assumed a much graver form.

The local affections of this disease have always been considered more or less serious, generally characterized by burning fever, violent head-ache, deprivation of sleep, extreme restlessness and sometimes have symptoms of Syphilis with complete prostration of the whole System.

In this condition the pulse is small and the patient falls into a somnolent languidity, which generally announces the termination

Diphtheria may be divided into two forms, the mild and severe. The mild form (in order to distinguish one from the other) may be called diphtheritic sore throat, being accompanied with a variable amount of feverishness, loss of appetite and generally a slight pain in deglutition.

The tongue has a white creamy coat, the velum palati, uvula and pharynx are of a bright red color. The tonsils are frequently much swollen, presenting the same livid hue; one or both may have white patches or ulcers on the inner side.

and all the surrounding organs of the throat may be secondarily affected.

The second form or genuine diphtheria is always characterized by a light State of fever, hot pungent skin, flushed countenance, congested lips a rapid feeble pulse, great difficulty in swallowing and hurried respiration.

The pharynx does not present the red appearance as observed in the mild form, but has a dark erysipelatous redness; and the tonsils are enormously swollen and have the same

dark red color, but in the mild form, the have large ash-colored membrane, spreading itself over the inner side of one or both tonsils.

As this disease advances the above symptoms increase in severity. Deglutition becomes so painful that children will refuse to swallow anything at all; breathing is difficult and saliva dribbles freely from the corners of the mouth.

The patient is either very restless or lies on his back in a semi-comatose state. The voice is often hoarse and very indistinct.

These cases when fatal either speedily terminate by rapid prostration or from an affection of the air passages approximating that of croup.

I have this far given some account of the history, nature, symptoms and diagnosis of this disease, which has been termed diphtheria. It was formally described as being a malignant form of sore throat and not until late years has the knowledge of its true nature been arrived at by the profession.

Contagion

There is as yet great diversity

of persons who visit or attend to them.

There are many instances that might be related where it has spread through a whole family and the next door neighbor escaped its ravages.

The cause of the persistence of its invasion is difficult to determine.

We have no sufficient reason to believe diphtheria to be contagious, yet it is highly necessary that we should exercise every caution. Every article used by the patient such as spoons, cups, towels &c. should be thoroughly

washed before being employed by any one else.

If there are small children in the family it is advisable that they be sent away from the house or at least should not be allowed to go into the room where the patient lies.

Prognosis

The mild form of diphtheria is not considered very dangerous, but when it is allowed to pass from the mild to the severe form, it is much more serious.

If the disease is properly

treated at the beginning the patient generally gets well, but is always subject to fatal issues.

Treatment

This disease like many others has been subjected to a great variety of treatment. It is only during the last few years since anything like unanimity has prevailed among the profession.

As yet there is no Specific remedy known capable of arresting the progress of diphtheria.

At the present time chlorate of potash appears to be one of the favorite remedies; although it is spoken of by some as not being at all reliable, still it is much employed by the practitioners of the present day.

It is very necessary in the first place that strict attention be given to hygienic rules. Stay close and ill ventilated apartments is injurious and should be one of the first considerations in the treatment of this disease.

Wet compresses may be beneficially applied to the

throat, where there is much
heat and engorgement.
Blisters should be avoided
on account of the irritation
which, and they give to the
parts engorged.
Blood letting is seldom or
never admissible in diphtheria.
If the disease is seen early,
simple saline may be given
such as Sesquicarbonate of soda,
aromatic Spirits of ammonia
or perhaps preferable to allow
alkaline drinks to be given
such as bicarbonate of potash
and chlorate of potash &c.
If there is any albumen in

the urine I would order the tincture of the sesquichloride of iron, which has been so highly recommended by Dr. Hastings. Good nourishing diet is always necessary in the treatment. Iced champagne is often beneficially given or a tumbler of milk may be desired, which are very good if wished for. Some physicians frequently give emetics if ipecacuanha or senega in the beginning of the treatment, but there is seldom any advantage derived, except where there are evidently symptoms present.

In some cases the attacks of diphtheria are so mild in character that local applications to the fauces may be all that is necessary, except in cases in which are always required.

Local treatment is almost universally employed in diphtheria.

The application of nitrate of silver or strong caustic solutions have been highly lauded, when judiciously employed to destroy the false membrane, but not otherwise.

It is generally applied by means of a probang, or.

a full-sized camels hair
brush.

Muriated tincture of iron
is an excellent remedy and
is now frequently preferred
to the nitrate of silver.

If nourishment be rejected
by the stomach or if swallowing
be painful, injections of
beef-tea with brandy and
gumwine may be employed,
and thus life may
unfrequently be sustained.

Tracheotomy is considered
as the last resort, when
all the resources of medicine
have been exhausted.

If breathing becomes difficult and asphyxia is threatened, tracheotomy should be performed, if the diphtheritic membrane does not extend into the trachea.

AN

Inaugural Dissertation

ON

DIPHTHERIA,

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of the

Provost, Regents and Faculty

of

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of the

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

Doctor of Medicine,

by

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Villsburg Penna.

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Diphtheria or diphtheritis, known also by other names, is an epidemic sore throat, characterized by formation of a pseudo-membrane on the tonsils and adjacent parts, dependent upon a morbid state of the blood. The appellation of the disease is derived from Διφθερα, — a Greek word, signifying a membrane.

Many unacquainted with the disease and its characteristics are led to believe that it is another malady to which mankind has fallen heir within a comparatively recent period, and that it was entirely unknown to our ancestors. This error has arisen from the fact that it did not receive the name, by which it is now most commonly known

till sometime after the commencement of the present century, and was not [illegible] written upon at great length by the various authors of our country. English authors, whose works are regarded as the standard publications of the science, and who have written even so lately as the present half of the nineteenth century, fail to make any mention of it, or, at furthest, give it but a passing notice.

That it prevailed more or less extensively many centuries ago, and that it ravaged successively parts of the continent and England, previous to the present century, is conclusively proved, and there are to be found those who maintain that it is one and the same disease, treated of by ancient writers under the name of the "Sydenham Ulcer", and there can be

doubt but that it has been, from time to time, confounded with diseases which bear to some extent similar characteristics. About the middle of the eighteenth century the attention of the profession was directed to a malignant sore throat, which in parts of England, France, Scotland and Sweden, and, from the observations made on the accounts transmitted to us, we are led to believe that it was a disease, essentially similar in its nature to that now termed diphtheria. Subsequent to the middle of the eighteenth century, from some unknown cause, the disease called forth but little attention and no extended published observations, till about the second quarter of the nineteenth century, when a treatise by a

French writer, M. Bretonneau, made its appearance, referring particularly to an epidemic and malignant sore throat which broke out in France, in 1818, which has prevailed there at times ever since, and which he has described under the name of diphtherite. From the presence of this epidemic in England in 1856 it first attracted the attention of English physicians who from its continued presence in the country, have made extended observations of its character and effects. In our own country we have evidence of the prevalence of epidemics of malignant sore throat during the eighteenth century, but little mention is made of the disease, till within the last few years, as it was not until the year 1856 that we

experienced fatal epidemics of the disease. Since that time however, it has been quite prevalent in many parts of the United States, and some sections indeed have not at any time since been wholly freed from its alarming and dangerous effects.

The symptoms are at first slight, the disease being gradually ushered in, unless in its severest form, with stiffness of neck, pain in the head, slight diarrhoea, increased frequency of the pulse, - a slightly furred tongue a moderate degree of nausea, with more or less fever sometimes the saliva dribbles from the mouth and an acrid discharge from the nares, resembling the coryza of Scarlet fever. The voice becomes hoarse and indistinct and an attendant cough short spasmodic and

barking in its character is lowered. The tonsils become inflamed and swollen, the glands about the lower jaw manifest considerable tenderness, and as the inflammatory action progresses, the uvula, velum palati, and the posterior wall of the pharynx become involved, and arising from this there is often difficult and painful deglutition. The muscular debility and the depression of the patient is so great and so disproportionate to the severity of the local symptoms of the disease that they constitute a remarkable feature of the disease. Soon after the appearance of the first symptoms manifested, the characteristic feature of the malady appears in the formation on the tonsil generally, of diptheritic

specks or white patches of exudation of
fibrous membrane. This exudation increases
with the severity of the symptoms, in thickness
and has a tendency to extend to the mouth
pharynx and oesophagus, also to the lar-
-ynx and occasionally spreads into the
nose. This exudation adheres more or less
firmly to the mucous surface on which
it has been formed, and if forcibly torn
off, there are exhibited red spots,
and in a short time a new membrane
is exuded on the organ, instead of the
one removed, but if the efforts of nature
succeed in its removal no new one, or
at furthest but a very filmy one, will
appear. As the disease [illegible] the
symptoms assume still more serious

forms - the constitutional depression and debility increase, in spite of the proper administration of stimulants. The exudation becomes darker in color, and an gangrene or sloughing occurs the breath possesses a most offensive and fetid odor, arising from the decomposition of the parts, which is now going on. This inflammatory and morbid action continues frequently till some vital organ becomes involved or the constitution so seriously impaired that death ends the struggle, by syncope, convulsions or coma. — The intellect is generally clear during the whole course of the disease and the pain experienced is no criterion whatever of the severity of the disorder. In most severe cases albuminuria has been

detected in the urine, and when observed has been considered an unfavorable sign.

In cases of recovery, the progress of convalescence is slow - the exudation disappears from the throat, the muscular debility and depression give way to gradually increasing strength and returning animation. But it is in this stage of the disease that the after-symptoms or sequelae of the disease are presented. Impairment of the voice from paralysis of the soft palate, imperfect deglutition so that fluids are often returned through the nostrils, inability of the muscles of the neck to perform their functions, loss of use of one or more limbs, especially of the arm paraplegia or more rarely hemiplegia.

diseases of the eye are the most common sequelae. The morbid poison which remains in the system, after apparent recovery, displays a special affinity for the nervous system, though it does not seem to extend beyond the motor nerves, and on these its effects are most generally and fortunately but transitory. The severity of these sequelae are by no means in accordance with the seriousness of the local symptoms of the disease for very often the paralysis has been most formidable, when the attack was scarcely more severe than an ordinary catarrh. The remoteness of these sequelae from the attack and also its mildness have led many to attribute them to other than the true cause.

As to the cause of diphtheria but little can be positively asserted. Many contend that the disease is not contagious, but it is now the opinion of a large majority of those who have studied of it, that it is communicable: and whether it be so or not, it should always be treated as such, that no harm may result, and that the extension of the disease may be prevented. Exposure to cold and wet — to the vicissitudes of the weather & the absence of proper sanitary and hygienic regulations, act as direct or as predisposing causes, and thus favor the invasion of the disease. It is supposed that this is the reason why the poor are so much more subjected to its fatal influences than the rich. It may occur as a primary or as a

secondary disease.

The complications of diphtheria are of such a nature as to merit more consideration than can here be given them. The disease which has occurred most frequently with the one in question is measles and when they co-exist they present a most dangerous complication, very often giving rise to severe and fatal affection of the lungs.

The diagnosis of the disease has given rise to great and extended dispute among the various writers of the disease some of whom contend that, from the similarity of the symptoms to scarlatina, that it is essentially the same disease, and others maintain that it cannot be so [illegible]

from croup. Albuminuria and the formation of a false membrane are characteristic signs of diphtheria and scarlatina, and it is on these analogies that the one party of disputants base the identity of the two diseases. But it may here be observed that albuminuria exists during the convalescent stage only of scarlatina, while it appears in diphtheria on the first or second day of the disease, and the membrane of diphtheria differs from that of all other diseases in having in itself the power of organization and in its never becoming vascular. It differs from croup in having its situation in the fauces generally, in being a blood disease, and in being of an asthenic character. That it is a specific

disease can be shown by its origin, its progress, its symptoms, its manner of termination and its sequelae.

The prognosis of the disease is not always or generally fatal but is necessarily dangerous. It is forced upon our attention by the serious character it may assume, and by the alarming effects which may follow even the mildest attacks. When it first appears in a section of country it takes on the usual characteristics of other epidemics, and it is remarkable for the rapidity with which it runs its course, and the sad and fatal results to which at times, many members of the same community or family are subjected, but as it extends, in time and place, its attacks

assume a much milder forum. The disease may be sporadic, as well as epidemic, and when so its attacks are most usually of not so serious a nature, either as regards its direct or remote influences. Although it occurs to both sexes at any period of life it seems to attack those in early youth or manhood most frequently.

The duration of the disease is so variable as to preclude the possibility of stating an average or definite period for it.

The morbid Anatomy consists in ulceration of the mucous membranes of the mouth - inflamed and ulcerated condition of the soft palate, fauces, epiglottis and upper part of the pharynx, all, or some, of which organs are covered with false membrane

which may extend even into the bronchial tubes. Clots are sometimes observable in the heart, and the brain may be congested with an abnormal effusion in the sac of the arachnoid. The meninges of the brain and cord also present morbid appearances. The kidneys together with the intestines also display more or less congestion. The diphtheritic membrane exists also on all the mucous membranes exposed to the air, and from this circumstance it is alleged that the action of the atmosphere tends to its formation and that it is necessary for its production.

The membrane is made up of "molecular particles, matted epithelium cells of all kinds and shapes, pus and blood cells".

Parasitic growths are present too at times but it is thought by some that they do not act as an exciting cause of the disease under consideration. Their fungus is the oidium albicans.

As to the treatment of the disease it can be said that the profession agree in a supporting instead of a depleting course. It must be directed to the control of the local mischief, as well as to the sustenance of the constitutional powers. The local treatment called for is the only point on which difference of opinion exists. While some highly recommend external applications to the throat, the strong solution of nitrate of silver — Nit. Arg ℥j, Aqua ℥j — directed to the seat of the false

membrane by means of a probang, or of other and more powerful cauties, by far the majority of practitioners strenuously oppose all modes of cauterization, or any course which tends to the forcible removal of the diphtheritic membrane." When a solution of Nitrate of Silver is used it should not greatly exceed in strength two or three grains to an ounce of water", and can generally be beneficial only in an early stage of the disease. Stimulating gargles have been used with much success, such as the Muriated Tincture of Iron - also gargles of Creasote - of Borax + Honey and especially of the Chlorate of Potassa. This last mentioned remedy is the one on which the most reliance seems to be placed. Besides these

mentioned many others have been recommended, and might be enumerated, were it deemed necessary. Local bloodletting is not considered admissible.

The general treatment requires equally as much care and attention as the local, for on this, in many cases, depends the most favorable chances for the patient and especially is this the case in the advanced stages of the more serious forms. In the early stage the effervescing draught may prove highly beneficial and also a Solution of the Bi-Carb. Potassae or that of Chlor. Potass. used as a drink. Purgatives and emetics have in some few cases been reported as successful in the early stage but generally there is no indication for

their employment and they may be said to be most commonly useless or even hurt-
-ful. When, as is usually the case, there is debility stimulants must be resorted to. and of these we will mention those which have proved the most beneficial. Quinine combined with hydrochloric acid or the latter remedy in combination with Chlor. Potassae is useful and worthy of trial. Tinct. Ferri. Chloridi is the remedy most highly in repute, and on it much reliance can be placed. Brandy properly administered is of much service and in many cases may be the only remedy called for. The malt liquors, cod liver oil, iced champagne and other stimulants and tonics, the mention of which is unnecessary have been administered

with the most happy results. A simple and nutritious diet is absolutely required and should consist of beef-tea and occasionally a raw egg, in brandy and water. Milk as a drink is allowable and advantageous. — When the local symptoms become so severe as to threaten death from the closure of the air passages it becomes the duty of the surgeon to perform tracheotomy as a dernier resort - notwithstanding the small amount of success which has attended the operation.

The following clinical case came under my observation and I give it especially on account of the Morbid Anatomy presented.

Dr. J. St. John U.S.A. was admitted to the National U.S.A. Genl Hospital, of Balt. March 3rd 1865 suffering with an attack of diphtheria. Before admission he had been treated with Nit. Arg. Fus. and externally with Vol. Lin., which constituted the local treatment, and with Tinct. Mur. Ferri, Sulph. Zinc., Chlor. Potas. Pulv. Dov. and brandy with beef essence, as general remedies. He was sick eight days previous to admission and when admitted the usual symptoms of diphtheria were manifested. Exhaustion, prostration, partial aphonia, and partial paralysis

of left arm were observed. A grayish white exudation existed over the tonsils and soft palate. The treatment consisted of Sol. of Nit. Arg. and concentrated Sol. of Capsicum as topical applications and the administration of Tinct. Muc. Ferri. after which an emetic was given which caused vomiting but with little relief. Opium in the form of tinct was employed as an enema to quiet nervousness and restlessness, with good result. Respiration more feeble over right than left lung. A mixture of mustard and turpentine was applied over the chest and throat, and a blister on each deltoid muscle. Instead of the Capsicum Liq. Ferri Persulph. was applied to the throat and as he became worse

Carb. Ammon was given. In spite of all remedies the patient gradually sank and died March 6th, respiration continuing, after the action of the heart had apparently ceased.

The post mortem was held three and a half hours after death. -

The lungs presented a peculiar mottled appearance - sank readily in water and there exuded from the cut surface a quantity of aqueous bloody liquor allied to exudation serum. In the left lobe an apoplectic clot about one half a cubic inch in amount was found. No apoplectic spots in right lung. Collapse of lowest lobe of right lung was strongly marked, and the bronchial tubes were occupied by hollow fibrinous

tube. — The trachea was completely covered with ash colored false membrane of one fourth of a line in thickness, closely adherent to the tissue beneath, and which extended into the right and left bronchia in the former of which it was two lines in thickness, in the latter only one fourth of a line. This membrane prevented the passage of sufficient air to right lung for the maintenance of life. — In the heart a clot of a pyramidal form was observed in the right ventricle communicating with one of larger size in the right auricle. Small clots were found also in the left cavities of the heart. In other respects the heart was normal.

The brain substance was firm but congestion of the pia mater was observable and about

two ounces of serum were contained in the arachnoid sac. The kidneys were found somewhat congested, otherwise normal. The intestines in parts exhibited signs of congestion, especially the stomach which presented cherry colored spots under the mucous membrane. The liver, spleen and pancreas, exhibited nothing abnormal. — The blood was found clotted in the large vessels — The urine upon being boiled was found to contain albumen.

Sectio-cadaveris conducted by Dr. G. M. McGill U.S. Army.

Clinical Report of Six Cases.

SUBMITTED TO THE EXAMINATION

of the

Provost, Regents and Faculty

of

PHYSIC,

of the

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

Doctor of Medicine,

by

.....

of

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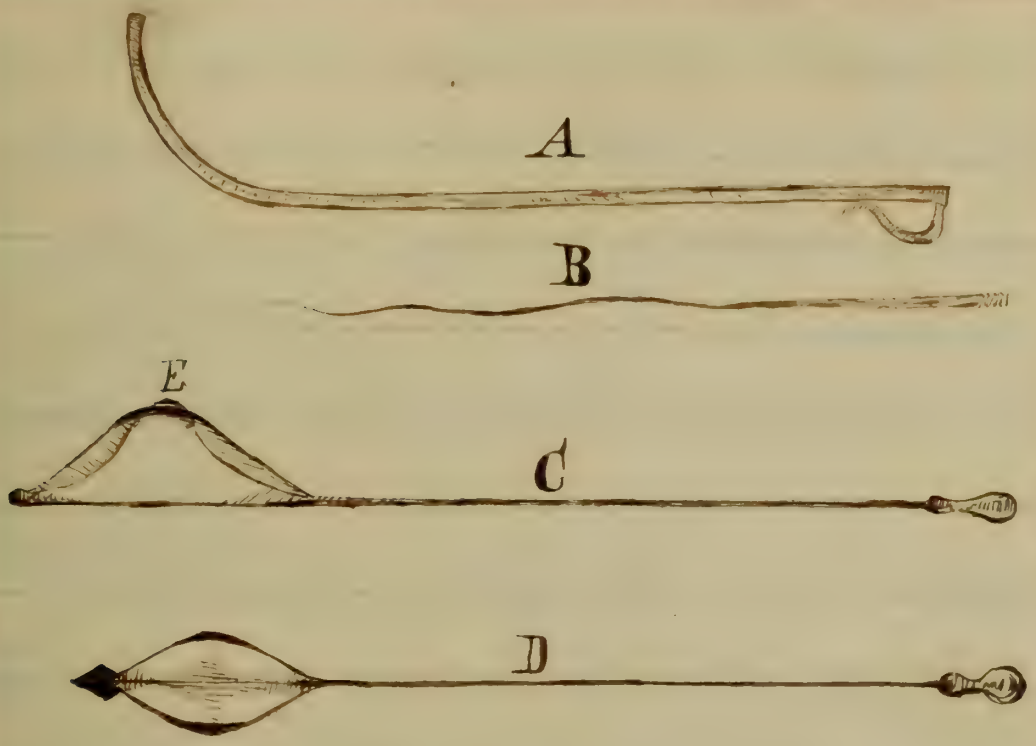
Session 78

Having been favored with the valuable clinical instructions of the Infirmary during the last year; I could but deem it appropriate to report several of such cases as have been directly under my observation, seeing the ravages of disease and the powers of medicine to stay its progress.

I tender my kindly thanks for the hand of assistance extended to me during the peculiar circumstances of a student's life; in those perplexing questions to find so readily wise in the mind of those before whom the extended field of medical science is being opened up. Respectfully submitted to your clinical instructors.

Maisonneuve's Urethrotome.



For the introduction of this instrument the the profession are indebted to Prof. Maisonneuve of Paris. Its safety, perfect simplicity and the success with which its use has been attended speak for themselves of its value.

Fig. A. represents a metallic bougie, grooved upon its upper surface, and has a [illegible]

scan upon the extremity to be introduced.

Fig. B represents a capillary bougie which may be readily introduced through the smallest strictures, upon the larger end is a female screw intended to connect with the metallic sound Fig. A.

Fig. C. Represents the knife which is introduced along the sound, flat upon its under edge where it rests in the groove, its upper edges meeting at a point E which is blunt, but both side cutting

Fig D. Different form of knife which is diamond shape and intended to divide stricture latterly instead of above as in the other, on the extremities of both knives are small knobs to retain them in the groove of the sound. Its angles are blunt like the top of the other knife so that they will not cut the strethra, and may be introduced the

whole length of a healthy urethra without dividing any portion. It also has both edges cutting so that having been passed beyond the stricture it can, without cutting the parts, be withdrawn. Prof. C. Johnston having obtained one of the instruments after studying its theory, saw immediately its value and determined to use it in a case at the Hotel Dieu which had resisted for several days all power of being dilated by bougies. Stricture small so that he was able to push in a very small stream. Wm Barnes, admitted March 10th 1865. was operated upon by Prof. C. Johnston with Knife C, stricture divided, urethra not cut except at the constricted portion, after which a No 10 Bougie introduced and withdrawn. Discharged 10 days after the operation, cured. Have heard since by letter is perfectly well.

Parker. Sct. 26

Typhoid Fever.

Entered the Hosp. Indianapolis March 27th 1865. Was a robust man, of giant like proportions, had always enjoyed good health. Had just arrived by steam boat from Newbern, N.C. with another patient in a very similar condition, although not so completely prostrated by disease. Could give no account of himself, but his comrade stated had been sick 12 days.

Symptoms On Admission.

Lies in an almost comatose condition, pulse quick & feeble, 120 in a minute, respiration hurried, skin hot & parched, tongue darkened with sordes. Was fetched nutritious on the

chest, abdomen & thighs. His appearence as if under the depressing influence of alchohol; having suffered injury which produced staphyloma of the iris caused him to present nothing very pleasing. Case was examined by Prof. Saml. Chew (diagnosis suspended) all the symptoms resembling typhus fever, and especially the eruptions which characterize that disease, also there being two patients in a similar condition from same region of country. While on the other hand Typhus fever having never appeared in this country, de novo, and there being no reason for suspicion that it was contracted by contagion, rather indicated typhoid fever. Hapily this is one of those

cases in which the treatment was pursued notwithstanding the diagnosis. We have here a patient, his whole system overpowered by an adynamic fever, with a rapid waste of tissues, a quick, feeble pulse, weak digestive powers; there can be but one course to be pursued. That is to raise and maintain the flagging powers of life, so to sustain life, while nature rids us of the depressing poison.

Brandy Zfs and Quin. Sulph. gr iii administered every 2 hours. Beef tea freely given as food.

March 29.

Our patient was examined by Profs. Chew & Johnston, both observing its great resemblance to typhus, came to the conclusion

having duly weighed all things considered it was Typhoid or enteric fever.

March 29. This morning in a very prostrate condition. Pulse 128, Picks at the bed clothing, Lays his water involuntarily, answers no questions rationally

March 30. Lies listlessly comatose, no improvement in any particular, nourishes very freely, stimulants freely administered.

March 31. Having anxiously watched for some indication of returning sensibility we observed with pleasure that nature assisted by the well directed aim of art were battling successfully the onset of disease. For the first time our patient gave evidence of returning sensibility, by noticing some of the surroundings in the wards.

but speaks incoherently and observes but little. Brandy, quinine and beef-tea continued

April 1st Since yesterday our patient has markedly improved, so far as to tell his name and to pass his urine without the introduction of catheter, but yet his whole frame is prostrated by disease

April 2nd. Continues to improve. Pulse 108 the glands of the throat enlarged and indurated, sore upon slightest pressure swallows with great difficulty, takes no food but in liquid form

April 4th Sensibility increasing, remembers nothing of the time spent in the infirmary. The swelling and soreness about the neck increased. Mopped with Zinc. Ferri chlor. Zinc Iodine used externally

Quinine suspended. Takes tonics and good nourishment

April 5th. Tinc Iodine stopped and Ammoniacal liniment substituted, complains of nothing but his neck, is still very weak unable to take any but liquid nourishment

April 8. The improvement is very gradual since last note. The swelling about the neck much softened, but upon examination of his body, two large suppurating bed-sores were discovered, upon the sacrum and shoulder of which the patient had never complained the vitality of the part having been so much reduced. Poultices were applied to anthrax and pressure upon the part removed.

April 9. The swellings about the neck fluctuate, indicating the presence of pus.

There being several suppurating parts which was a constant drain upon the already reduced body of our patient, it required that the waste should be supplied.

Quinine resumed, lenugenous tonics given and the most nutritious liquid food.

April 10. Prof. C. Johnston opened the abscess of the neck from which pus was copiously discharged; upon whatever portion of the body he may rest there was a tendency to the formation of Anthrax

Application of Emplas. Plumbi

Pulse reduced to 60. Bowels constipated.

April 11th —— Pulse 70.

The continual discharge from the neck greatly aggravates his sufferings.

No change in treatment. Quinine.

[illegible] [illegible] [illegible] and good nourishment.

April 12. Is able for the first time to take solid food, for which he has great relish, general appearance improved, pulse & respiration [illegible], nearly resumed their normal condition, appetite improved.

April 24. Since last note has been gradually improving, anthrax healed swelling from the face and neck almost entirely disappeared, discharges but little, good appetite, sleeps well, able to walk out on fine days. Needs but little medicine.

April 27.

Takes no medicine whatever, walks considerable distances, without any appearance of [illegible]. All functions of the body in a healthy tone. Discharged.

Ryan.

Tuberculosis & Anesthesia.

A German man about 40 years of age entered Belle Infirmary during the winter of 64. Said he had always enjoyed good health. Had always been able to pursue a very active life as sailor and take ordinary amount of exercise. Gave no history of there being a predisposition to tuberculosis in his family.

His appearance suggests to one mind that the patient was a cachectic constitution.

Is a man near fifty years of age

Was examined by Prof. Richd McSherry before the class.

Symptoms on admission.

On percussion there is slight dulness

upon the affected side, not very marked however, but apparent to an experienced ear. Is able to expand his chest well upon inspiration.

Respiration prolonged and course.

Pulse increased in frequency, but diminished in force. At a localized portion of the left lung beneath the clavicle may be distinctly a moist click, like air passing through a consistent fluid, producing a gurgle upon coughing.

Vectorilogy not very marked. Has considerable cough with but little expectoration.

Has night sweats and has had haemoptysis, but very slight however.

Thus we have nearly all the symptoms pointing to tuberculosis.

Prof. Richd. McSherry prescribed for our patient Col. Liver Oil, good nourishment and impressed with the indispensable value of pure air, and as the patient was able he was permitted to enjoy the salutary effect of pure air and sunshine out of doors. This constituted the foundation of his treatment and we are soon to see its beneficial effects.

The general health of our patient was improved, there were no new formations of tubercles and those already formed were soon found to have disgorged their contents and to cicilize.

He so far recovered from his original trouble as to be able to leave the institution but remained for an affection of his foot.

Commentary: The advanced age in which our patient was attacked was unusual, but he may have had depositions of tubercular matter and cicatrization produced without his knowledge.

One circumstance favorable in the treatment of this case was the facility with which his oil and other nourishment was assimulated.

For as Dr Chambers remarks in his renewal of life, Page 304,

"It is truly by aid of the digestive viscus alone that consumption can be cured. The chest is the battle field of past conflicts, the stomach the ripening grounds for the new levies of life".

The cure is effected in the lung as in

other parenchymatous tissues, the result of simple exudation; and that the process in each is identical is proved by the frequency with which in the latter calcareous deposits also take place. "If then the further deposition of tubercle could be arrested there seems no reason why cavities in the lungs should not heal as ulcerations and abscesses in other internal organs.

From observation arrived at the knowledge that spontaneous arrestment of tubercle in its early stages occurred in the proportion of from 1/3 - 1/2 of all individuals who die after the age of puberty. Bennett

Continued Anesthesia.

At the close of the winter session our patient was complaining of obscure migratory pains

in knee and ankle joints. Soon after
Prof Chew took charge of the house in the first
of March there occurred total paralysis of
sensation below the knee so much so as to
be insensible to the knife and lighted match
when applied to his integuments until they
had penetrated beneath its surface.
The power of motion was unimpaired the
patient being able to locomote from place
to place, when his eye was directed to his
foot but if not was liable to fall, from
its not receiving the impression when coming
in contact with the floor.
℞. Strychnia sulp. ℔ 10 every 4 hrs.
Tr. Nucis Cornucae, apply externally.
under which he is improving.
March 12. Dose of strychnia increased to

15 minims. The sensibility returning in the parts nearest the nervous centres.

March 20. Sensibility fully restored to the leg but not below the ankle, but by the persistant use of the remedial agents its sensibility also soon returned.

Was discharged last of May sensibility fully restored so as to be able to walk without a cane.

Commentary: In this case we had paralysis of sensation alone, in which nux vomica and its alkaloid strychnia were the only remedies employed with so satisfactory results that we can but ascribe great efficacy to them, if so, proving that the action of strychnia is not confined to the anterior colemns of Spinal-cord.

But the question natural to arise in one's mind; What is the source of this paralysis? Was its cause centric or excentric?
If centric, How is it to be explained the retention of sensibility in the thigh, as it passes from periphery to the centre.
If excentric; If for instance a tumor was pressing upon the nerve in its course.
Why was not motion as well as sensation destroyed as their nerve fibres are so intimately blended that they cannot be discriminated? We must leave these questions, but not without the hope and belief that the rapid strides of the medical science in its onward march will dispel all obscurities and doubts.

Haney. Aet. 19.

Is a sailor, has led a very dissipated life, has very feeble constitutional powers. Was in the Infirmary Dec. 1864 with Bronchitis and while here contracted variola, for which he was sent to the Marine hospital.

Returned to the Balto. Infirmary April 25. 1865 with ascites, the marked difference between his emaciated face and limbs and the distended abdomen rendered his appearence rather singular.

He was pale & enemic, his breathing embarassed, his hearts action quick. Had some little cough and expectoration depraved appetite, bowels moved frequently. From what source does this large effusion

originate? There are three grand sources to which we may first look. The liver, kidneys & heart. First the kidneys, no pain in the lumbar regions the urine normal in quantity and quality. The sounds of the heart were perfectly natural except were rather accelerated due to the pressure of the fluid in the abdomen.

To the liver then we would confidently look to as the seat of the disease

1st Because the others negatively indicate this as its most likely seat.

2nd The previous habits of the patient, partaking so freely of intoxicating liquors, and the consequent degeneration of the liver, so frequently following.

"The constant presence of Alcohol in the blood obstructs the necessary removal of the

fibrous capsule of the liver; contraction of the degenerated tissue ensues; the portal blood cannot pass through the viscus, to get rid of its effete particles or to bear the nutriment to the general circulation."

the natural halitus of the peritoneal sac cannot be reabsorbed and therefore accumulates to form an ascitic or as the Greek word means, an "ensacked" collection of serum. With the fluid is mixed also the albumenous serum and fibrous serum which exudes from the obstructed capillaries and often these capillaries rupture and the blood corpuscles are found in the dropsical fluid."

(Chambers Renewal of life)

Fatty degeneration of the liver has been observed to be very common in drunkards

who are constantly taking alcoholic liquids.

"Of 13 individuals who died of delirium tremens 6 had very fatty liver, in 3 the organ contained little, in 3 none at all and in 2 there was cirrhosis" (Frerichs)

2. I have not much doubt that the kind of drink used predisposes to fatty liver whether or not it contain carbon bodies. the amount retained in the system.

The cases under consideration brandy & whisky were principally used.

3. When he entered the infirmary the amount of effusion was well marked, measuring 34½ inches, 2 inches above the umbilicus.

4. How is this effusion to be gotten rid of?

5. The powers of life are to be sustained while we get rid of the fluid, principally by the

bowels and kidneys, and the general health being sustained by good nourishment so that absorption may take place in the abdomen.

Nature unassisted gave vent to a large quantity of fluid by the bowels by 4-5 moves daily. ℞ Potass. Acet gr xii as a diuretic ter die.

In the right lung some effusion was discovered, respiration imperfect on that side and duller than on the left. Terpentine liniment, bis die as a counterirritant.

April 28. To increase the amount carried off by the bowels ℞. Potass. Bi tart ℥i
Pulv. Jalab ℥ss.
S ℥i bis die. Circ. of abdomen 33¾ inches.

April 29. Powder of Potash and Jalep stopped and pills of ℞. Pulv. Scillae gr xii
" Digitalis gr xii
Hydrag. Mass gr xxiv.
ft. pill xii, ℥i ter die.
Pulse 96. Heart's action increased in frequency & force, arising from slight hypertrophy.
May 3. Kidneys opperating freely, bowels moved frequently. No ptyalism produced no change in the treatment. Abdomen 35 inches
℞. Ungt. Pot. Iodid. Comp. to be applied to abdomen.
May 4th Circumference round the abdomen 35 3/8 inches. Passed 26 ℥ of urine
May 5. Abdomen 36 inches.
As a diuretic. ℞. Potass. Acet. ℥iv.
Dig. ℥ss ter die. Spts. Æther Nit. ℥ii
Aq. ℥iv.

May 11th. Squills and digitalis suspended on account of producing too free action of the bowels. The effusion not diminishing since last note varying from 37½, 35⅜, 35¾ inches, sleeps at present quite well, has but little appetite, respiration not greatly embarrassed by the fluid. Has some slight bleeding from the nose. Pulse 90, weak.

May 17. Since last note has been much in the same condition, the effusion not varying perceptably, being at present 35 inches no measurement of urine.

May 22 Very weak and prostrate, is greatly harassed by a cough, has ten moves of the bowels daily, large watery in character, abdomen 34 inches in circumference. To allay the distressing

cough. Glycerin, acid hydrocyanic & morphine. Has very poor appetite, takes but little nourishment

June 1st. Since last note the effusion has been gradually increasing, oppressing very much the breathing. Deemed inexpedient by both Profs. Chew and Johnston to employ Paracentesis as there is tympanites over whole abdomen. A Terebinth given with a view to remove the contained air.

June 6th. Is continually loosing strength the powers of life gradually failing, the effusion not diminishing. The use of the trocar not advisable. Tympanites not diminished.

June 17. Since last note has been gradually sinking. Is to day very prostrate, respiration hurried, has an anxious look about his

countenance, notices nothing, has considerable diarrhoea. Is delerious and in articulo mortis. Takes a little milk punch. Is in this contition till death closes the scene June 20, 4 O'CK P.M.

Sectio Cadaverous.

Body very much emaciated.

Upon opening the abdomen several gallons of serum was discovered.

The liver was found to be cirrhosed to a considerable extent.

In the right kidney was found an abscess ½ inch in diameter filled with pus.

Commentary:

The treatment in this case was palliative, to diminish the effusion, to relieve the harassing cough, to meet the symptoms as they might

arise. All remedies that might be given with a view to restore the liver to its former condition might as well be expended to restore a large cicatrix to natural skin If however the large quantity of fluid could have been got rid of, nature might have been able to resume her natural functions, in at least such a degree as have spared life.

Thanks. Act. 42.

Entered Balto. Infirmary June 14th

States he has previously enjoyed a fair degree of health. Has been able to attend to an active life as gardening, and compelled to desist entirely only about two months before entering the house, although had suffered ill health for several months previous. His parents lived to a good old age, was aware of no disease of the chest in any member of the family except his sister, who had died several years before of tuberculosis.

On admission, his face blanched, whole body emaciated considerably. Right side of the chest perfectly flat on percussion and absence of respiratory sounds upon

that side no tubular breathing, no cough or expectoration, suffers but little pain respiration hurried, pulse 90 weak and feeble. Urine scanty in amount.

Diagnosis Pleurisy affecting the whole of the right side of the chest

Patient asserts that he is conscious of there being fluid in the chest upon any degree of motion. Is compelled to assume the erect posture so as not to interfere with his respiration.

℞. Tr. Cinchonae Comp. ℥ii ter die.

Spts. Fumenti ℥ß at dinner

℞. Potass. Acet ℈i ter die as diuretic.

June 9th. The amount of urine has been gradually increasing in amount till it has nearly reached its normal standard. General health not perceptibly improved. Is a man of a remarka

by fine temperament. Her intellectual powers above by far the standard of hospital patients.

June 19. Dr. Beckenbaugh (Resident physician) discovered a decided metalic tinkling to the right side of the right nipple.

June 20. Was carefully examined by Prof. Chew before the class, metalic tinkling still audible. Dr. Chew stated it either arose from a large cavity in the lung or by air passing through an opening of the lung substance into the fluid contained in the pleura, rising to its surface and bursting.

June 21. Same sound remaining, although somewhat changed in position. Is very weak to day although submits very willingly to the examinations of the class.

Asks repeatedly of the prospects of his recovery
appearing at the same time his own fears
Is able to walk about the ward.
Respiration very much accelerated
Retired on the evening of the 21st complaining
of nothing that especially excited our
fears as to his safety. During the night he was
observed to be very restless, going to all the vacant
beds in the ward, as if in search of relief.
On the morning of June 22 he was found
dead in his bed rather unexpectedly to his
attendants in the House.
Section Cadaverous. Upon opening the
thorax, the whole of the right pleura was
found filled with purulent matter, about
a gallon in quantity, rendering the examination
very expensive. The lung upon this side

vessels entirely gone. The larger bronchi still remaining, and the pleura still remaining somewhat thickened. The large bronchial tubes opening directly into it is purulent fluid which satisfactorily accounts for the metallic tinkling heard during life. The left lung completely infiltrated with tubercles. Vibrios, near 2/3 of his lungs were incapacitated.

Commentary.

The small amount of cough with which our patient suffered was rather unusual but by no means very remarkable.

"Consumption may sometimes exist and even prove fatal, and large portions of the lungs be disorganized without there being any cough, or without the expectoration of enough cough to show the nature of the patient

or friends to it" Watson's practice

Another circumstance to which our minds were attracted was his inability to pursue his occupation, with so large a portion of it's vital organ implicated in disease.

Dr. Watson in his lectures mentions a similar case. "Every season I lost a friend whose lungs were full of cretin and crude tubercles. He had been a valetudinarian for years; but the pulmonary disorder had been manifested by decided symptoms during a few months only."

Mc. Quain. Act. 35.

Entered Philte Infirmary Sept. 7. /865.

Is a man of good proportions, but appears much older than he in fact is, owing to great manual exertions, and exposure to the vicisitudes of the weather.

Had up to the present time enjoyed an ordinary amount of health, had been employed as a laborer. Has been ill with the present attack three days.

Symptoms on admission.

The right side was dull upon percussion, vocal fremitus greatly increased, loud tubular breathing, no sound heard in the small air vessicles, and a peculiar cooing sound produced by coexisting bronchitis. Upon left side course crepitation of bronchitis

may be distinctly heard; the air still permeating the lung upon that side. The left side being duller also than in health.

Flushed countenance, hot skin, hurried respiration, quick pulse and bounding. 130 in the minute, no cough were among the most marked symptoms.

Dr. J. J. Beckenbaugh. Res. Physician ordered. Emplas. Cantharides be placed over right side as counterirritant.

℞. Hydrag. Chlor. mite gr V.
Pulv. G. Opii
" Ipecac. āā gr 1. ft pill. 1.

which acted very decidedly in increasing the secretions of the skin.

Sept. 8. Prof. Dan. Chew examined carefully our patient this morning in his clinic.

Diagnosis. Double pneumonia. The right side having progressed to the second stage, while the left was yet in the first (congestion.) Continued the the diaphoretic, but said that in such a reduced condition of the powers of life it could not alone be relied upon. He needed stimulants and good nourishment to tend as far as possible to maintain life while the natural process to restore the affected part was left almost to nature's efforts alone. ℞. Vini galici ℥ß every 2 hours, oftener if necessary. Beef tea in small quantities often repeated. Evening. Our patient has perceptably improved during the day pulse has fallen from 130-120 while under the free use of stimulants, and acquired power.

Sept. 9. Pulse 108

had fallen twelve during the night and 22 since the morning previous, was again carefully examined by Prof. Chew in the presence of the class. While being examined by those attending the clinic became too much exhausted to maintain the sitting posture. Sept 10 Sunday

Slight improvement over the previous day air entering more freely the left lung and expectoration more easy. pulse 112.

Sept. 11. Was examined again before the class. the patient expressed himself, which in fact was evident to a casual observer. The air freely entering the left lung, vesicular murmer heard, but breathing puerile upon that side on account of the right lung being incapacitated. Patient drowsy caused by taking 4 grs. of pulv Doveri every three hours

as a diaphoretic instead of Hydrag. nite, Opium and Ipecacuanha. The right side still flat on percussion, tubular breathing still existing from the solidification of the lung. Pulse 100

Complained of considerable cough during the night of the 10th was prescribed stimulating expectorant ℞. Syr. Scillae, Syr. Senicae aa ℥i

Tinc. Hyoscyam. ℥ß.

1 Teaspoonful every 3 hours.

Sept. 12. Respiration improving, physical condition of the right lung but little changed. A very unpropicious symptom has supervened since the evening of the 11th Diarrhoea occured, the patient leaving his bed frequently during the night (there being no night watch). Has motions about every 2 hours

℞. Acid Tannic gr iii, Pulv. Opii gr 1/4 every 3 hrs.

Pulse 88. Port Wine substituted for the brandy ℥ß. q.q.H.

Sept. 13. Patient much improved, breaths less laboriously and hurriedly, pulse 80 and much stronger, Diarrhoea checked so far as to justify the withdrawal of Tannic acid and opium pills. General appearance improved. Takes nothing but wine and beef tea. Fine crepitation heard in the left lung, indicating the disappearing of the congestion and the lung resuming its normal functions. Upon the right side however, resolution has not as yet taken place, expresses himself decidedly better, more willing and able to bear the examination of the class.

Sept 16. Since last note has been gradually improving, partakes of nourishment freely

the powers of life reviving although still
symptoms of weakness. Pulse 95. Respiration 25.
Sept. 18. Vesicular respiration distinctly heard
over both lungs, air enters freely everywhere
no tubular breathing the lung not being
sufficiently solidified. Occasionally a mucous
rale may be heard of the left lung.
On percussing the lungs there is still
considerable dullness over the affected side,
notwithstanding the free entrance of air; this
was more marked posteriorly owing to the
supine condition of the patient.
We have now every reason to believe in the
sure and speedy cure this being but the
12th day since his admission.
Same treatment.
Sept. 20. Has so far recovered as to be

able to sit upon his bed, requires but little medical attention, convalescence having fully set in, strength much reduced by the powers of disease. Partakes heartily of nourishment which is nutricious and assimulable.

Air enters freely every portion of the lungs still there is increase of vocal fremitus and dullness owing owing to the infiltrated celular tissue of the lungs being a better conductor of sound, such a condition may remain for a considerable length of time without any inconvenience to the patient or cause of serious apprehensions on the part of his medical attendants.

Commentary.

Thus we see a case of double pneumonia come to a favorable issue

during the progress of which disturbance
suppressed, on the 15th day so far at
least as to be able to sit up.
Not treated as our fathers did by antiphlo-
gistics but sustained by stimulants and good
nourishment.
This is certainly one evidence of the ad-
vance of the medical science.
To the overthrow of the sentiment who in-
sist that inflammation was some great
increase of life, so great life as it were
which requires such remedies as Blood-letting
Tartar emetic and Calomel to extinguish.
And not a decrease of vitality, which requires
the abstraction of blood when it exists mechan-
ically" as the catheter to draw off the Urine."
while existence of "Vital elements" requires

sustaining till posterity has time to accom-
plish revolution

AN

Inaugural Dissertation

ON

Diarrhoea

SUBMITTED TO THE EXAMINATION

of the

Provost, Regents and Faculty

of

PHYSIC,

of the

UNIVERSITY OF MARYLAND,

FOR THE DEGREE OF

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by

Arthur Christie

of

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Diarrhoea

Diarrhoea Δι'α through and ῥέω I flow is a morbid condition in which more numerous and more liquid evacuations pass from the alimentary canal than are normal. It may be regarded as rather the manifestation of various unhealthy states of the digestive organs than as a disease itself. Of the quantity & quality of the dejections, causes of the attack & condition of the patient the variety is infinite; the stools may be few or many faecal or not, serous or mucous, bilious or without appearance of bile and may contain fragments of ill digested food. Lientery. The morbid conditions causing an attack may be brought on by excess

of nourishment or by starvation, by change of diet by change of air by heat or cold or by mental emotion: diarrhoea also frequently attends other diseases induced by none of the cited causes, the malady may be sporadic or epidemic, it spares no age or sex the brute creation as well as man, even insects are victims to its force. A disease thus various in its origin & phinomina is as may be supposed no less so in its consequences an attack may be of no moment, it may endanger or even extinguish life rapidly. Treatment for such variable effects must also vary; some fluxes get well of themselves others require but the simplest medication accordingly we find few outside of the

profession who is ignorant of its variable causes are not possessed of a sovereign remedy for diarrhoea, the truth is the source of the flux is what should regulate the treatment - thus for an attack brought on by an overloaded stomach a purge to expell the irritant ingesta would be appropriate but for diarrhoea dependent on a relaxed condition of the capillaries not originating in such stimulus an astringent would be the remedy. The difficulty I conceive to be in correct diagnosis of the cause of trouble not in treatment when discovered: the unhealthy condition of the lining membrane of the intestinal canal is the object of attension to the pathologist: those cases in

which diarrhoea is induced by excess of
food or by flux into the intestinal tube from
glands increased causing only temporary
irritation of the mucous membrane are
comparatively of trifling importance: in
eight affections the membrane exhibits
but little appearance of disease but is so
morbidly sensitive that food of even
bland kind is sufficient stimulus to excite
increased peristaltic action and preternatural
secretion. Peristaltic movement is the
action of the circular fibres of the muscular
or central coat of the intestine which
contract successively from above downwards
& force chyme forwards towards the
anus; increase of this action is a phenomi-
non common to all diarrhoeas. The flux

dependent on mental emotion, generally anxiety or fear, is brought brought about by thus increased movement - for, the food near the stomach is liquid then the peristaltic movement excited by nerves from the great solar plexus situated immediately behind the stomach in front of the caliac axes hurry the food through the canal with increased speed as it reaches the rectum still liquid; but for this its watery parts would be absorbed by the lacteals & veins of the part & its normal consistancy would be preserved; as it is the excrement arrives at the anus liquid the sphincter ani supplied by a hemorrhoidal branch of the sacral plexus is relaxed hence the diarrhoea from increased

peristaltic action. Hence diseases in the muscular coat even with mucous membrane healthy when bowels are greatly distended with food often occasion diarrhoea of that kind called crapulous. A common form of the malady is that arising from a relaxed condition of the lining mucous coat so that the capillaries & other orifices being patulous the watery parts of the blood often the red colouring matter itself hence the frequency of bloody stools to escape into the canal, this mixing with its natural contents liquifies it producing the fluid discharges. Often capillaries are generally the result of allayed inflamation. but at times debility of the mucous membrane &

the sole cause. Any ~~slight~~ congestive state of the lining membrane ranging from slight irritation to inflamation sufficient to render the part gangrenous in either much or little of its surface occasions mucous stools; when the seat of the disease highly inflamed is in the small intestines & much blood is poured out it is called enteritis; when the inflamation is in the larger or lower bowels dysentery. Under either name the inflamation often extends to all layers of the part affected, violent tormina & tenesmus are experienced & the disease may be most formidable; such a diarhoea is often hard to treat & obstinate the rejection vary

in colour according to the condition of the liver. they consist too largely of fluids secreted by the inflamed membrane. When the intestine is in the worst condition ulcers frequently exist these in extreme cases perforate the tube allowing its content to escape into the cavity of the abdomen lighting up the often fatal peritonitis, in such an extremity cessation of peristaltic motion affords a chance that the perforation may be closed on this hangs the only hope of saving life opium in such cases is the sheet anchor. In some cases the inflamatory condition of the inner lining of the canal is transferred

to the outer or serous causing exudation
externally when the disease is no
longer diarrhoea but ascites, conversely
exudation from serous membrane
may be driven to the mucous - I have
seen ascites or water in the abdominal
cavity expelled by cathartics. Beyond
all comparison the most frequent
cause of diarrhoea is irritation
caused by some disagreeing food
this with the mucous membrane
originally healthy by be induced if
insufficiently masticated food even
if of a wholesome kind; spoiled
viands, some sorts of wine, beer or water
to which the drinker is unused
according to the idiosyncrasy of the

person may give rise to the disease.
By exciting causes affecting the system
generally sudden cold especially after
perspiration when the pores are open
is a most frequent cause. Sometimes
the suppression of habitual discharges
or the retrocession of an eruption
acts on the bowels & produces the
flux; often vegetable miasmata
or putrid animal matter as that
breathed in a dissecting room cause
the disease - Diarrhoeas so induced are
generally called mucous from the
dejections consisting largely of the secretions
from the mucous membrane; should there
be much disturbance of the liver the
stools may be green from acidity acting

on the bile. Diarrhoeas depending mainly on hepatic derangement are common & may arise from bile secreted in increased or diminished amount or of perverted kind; when from excessive amount the diarrhoea is called bilious the dejections are either highly tinged with its colour or thrown they meet with much acid become green the patient is often feverish when vomiting comes on the affection is called cholera morbus.

When the biliary secretion is diminished in: when the biliary secretions are deminished in amount the stools are of a light colour this kind is less painful than the preceding it perhaps arises from want of sufficient

capillary circulation then congestion having occured relief is obtained by effusion from distended vessels this state of things prevents the liver forming its normal secretion. A third kind is when the bile is secreted like either of the preceding conditions as to quality & in morbid quantity also the stools are dark as pitch viewed in mass like they often are in cases of intestinal hemorrhage when the blood is perverted in quality but when seen in thin layers through transmitted light the yellow colour distinguishes them from this hemorrhagic state. In old times the state of the mind was supposed to depend on the state of the bile thus melancholy μέλαν χολή black bile now signifies a mental condition only; how

much the present meaning of the
word is dependent on physical cause
is hard to say - so too choleric now meaning
only irascible formerly meant to
imply the state of the mind as
dependent on the condition of the
bile. With children there is a
form of in which the stools are at
first of a bright orange colour but
by contact with the air become dark
green constituting the chopped spinach
stools of authors there are very foetid, a
bad sign; great factor of stools is an
indication of far gone disease in the
seat of trouble. Diarrhoea is attendant
on numerous diseases - the indication
is of course to remove the cause if

this can be effected such diarrhoea ceases of itself as however this frequently requires time & is often impossible the diarrhoea itself has to be treated. Flux dependent on phthysis is induced by inflamation or ulcerations of the intestines the blood being depraved the capillaries are too weak to contract and passive hemorrhage occurs; it frequently alternates with the colliquative sweats of the disease but may occur while these exist; under such double discharge the patient soon sinks. The Flux of children from teething requires attention to the gums when the cause is removed the trouble ceases. All fevers eruptive or otherwise are in their latter stage frequently rendered more fatal by diarrhoea; in scarlet fever the acid secretions

of the throat when swallowed are said to be the cause. In typhoid fever ulceration of the glands of Payer cause is when there is no specific origin the weakness & debility of disease relax the mucous membrane so that in all conditions of low vital power from whatever cause diarrhoea frequently supervenes.

Treatment

As to this it has to vary with the character of the attack. Should the flux be solely dependent on increased peristaltic action if treated at all agents directed to the suspension of this are necessary Tinctura Opii in ten grain doses or a fluid drachm of Tinct. opii Camphorata repeated if necessary meets the demand. Diarrhoea from

irritant ingesta should be treated with a purge to expell the offensive matter & a little Laudanum assists the cure — thus a flux that has run on for some days has often been arrested by Plenum Morrhue ℥j with the addition of Tinct. Opii gr x. For the diarrhoea of relaxed mucous membrane Rhalany Logwood Catachu Kino or any other vegetable astringent is of service the value of these depends on the Tannic acid they contain this then is often extracted especially from Galls & given as an astringent Acidum Tannicum gr 11-111 with Pulv. Opii gr 1/4 in pill form every three or four hours I know from my own observation to be very good treatment for this form of diarrhoea Mineral

astringents are also often of service Sulphate of Zinc gr 11-111 with a little opium in pill form - Sulphate of Copper Acetate of Lead with the addition of opium are valuable agents. An English prescription I have known of service is

Confect. Aromat ℥i
Tinct. Camph. Co ℥j ss.
Ether Chloric ℥ii
Aq. Menth Pip. ℥xv M. Of wh.

a table spoonful every 4 hours but I now doubt if this would be better than Tannic acid. When there is much hepatic derangement Mercury perhaps with a little Creta preparata is of service. Diet is of great importance, fruit or indigestible

viands of any kind ought to be
avoided without an observance of
this precaution remedial agents are
often of no avail.